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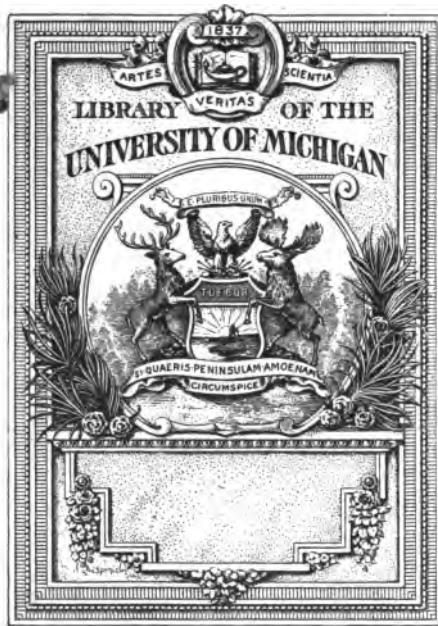
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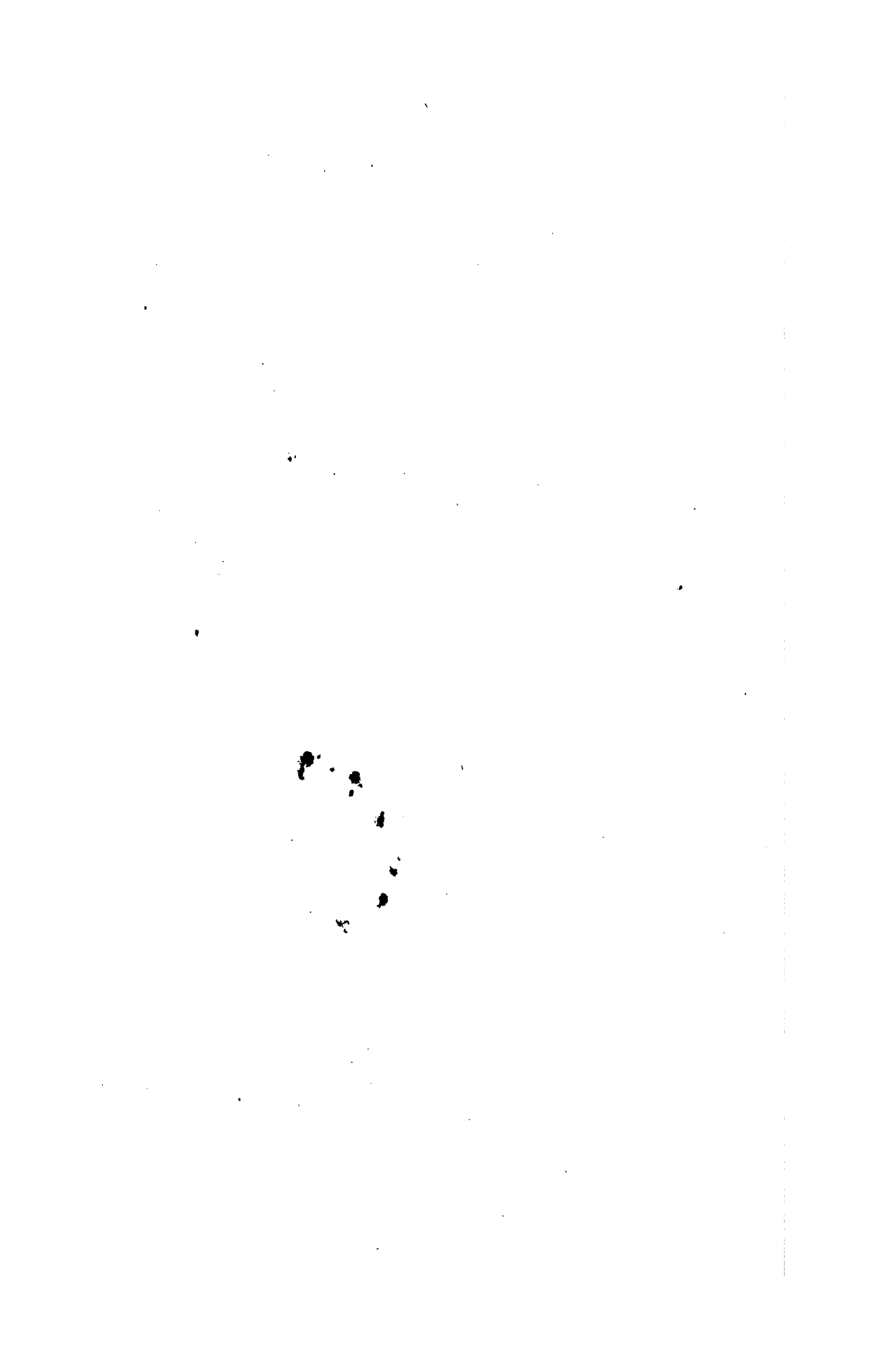
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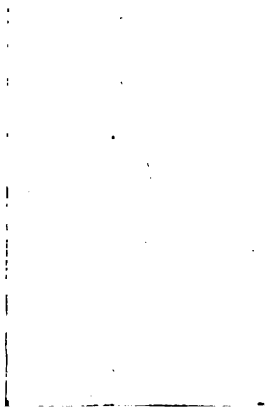
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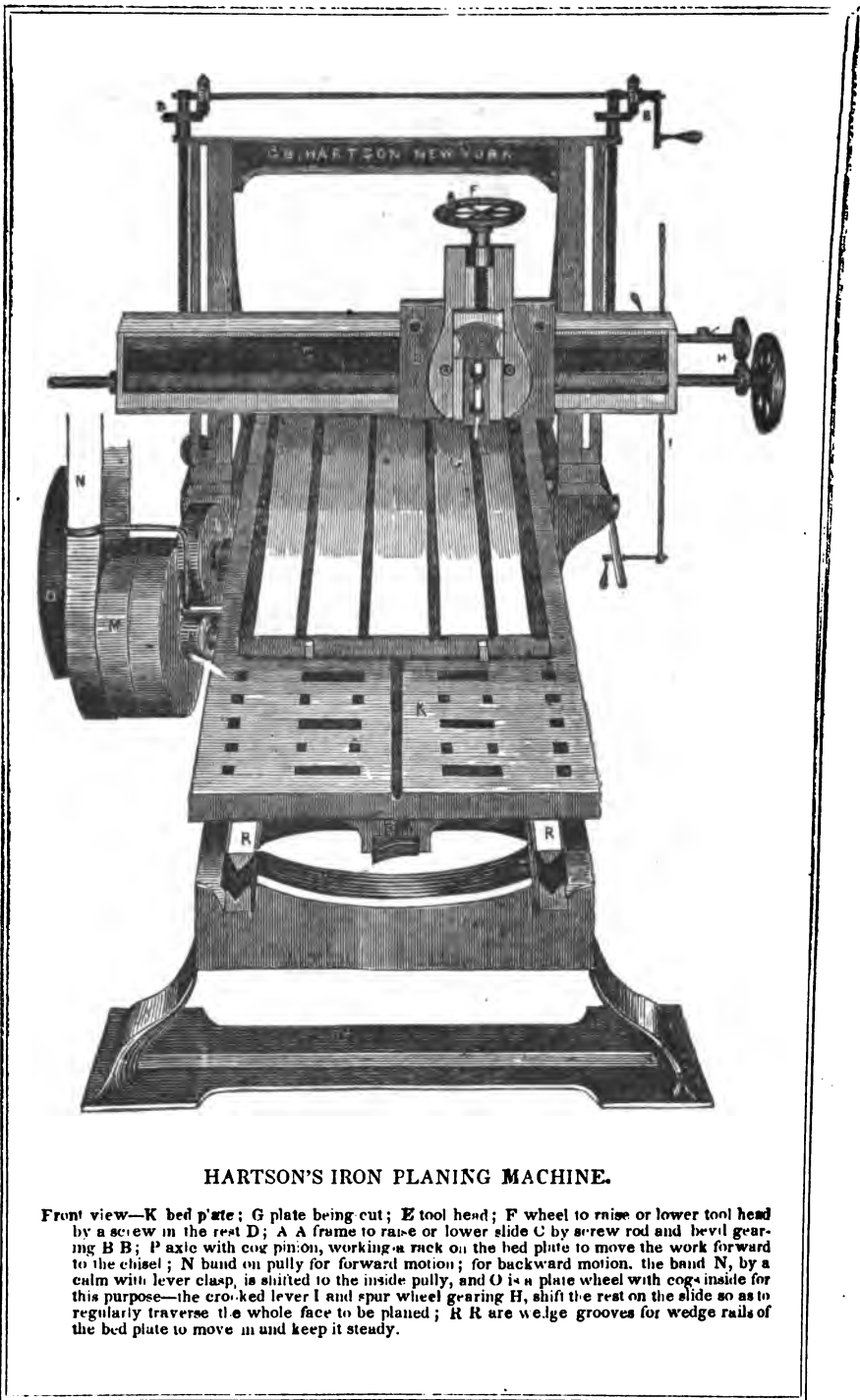












HARTSON'S IRON PLANING MACHINE.

Front view—K bed plate; G plate being cut; E tool head; F wheel to raise or lower tool head by a screw in the rest D; A A frame to raise or lower slide C by a screw rod and bevil gearing B B; P axle with cog pinion, working a rack on the bed plate to move the work forward to the chisel; N band on pulley for forward motion; for backward motion, the band N, by a cam with lever clasp, is shifted to the inside pulley, and O is a plate wheel with cogs inside for this purpose—the crooked lever I and spur wheel gearing H, shift the rest on the slide so as to regularly traverse the whole face to be planed; R R are wedge grooves for wedge rails of the bed plate to move in and keep it steady.



MOTT'S GARDEN ORNAMENTS.



SEVENTH

ANNUAL REPORT

OF THE

AMERICAN INSTITUTE,

OF THE CITY OF NEW-YORK.

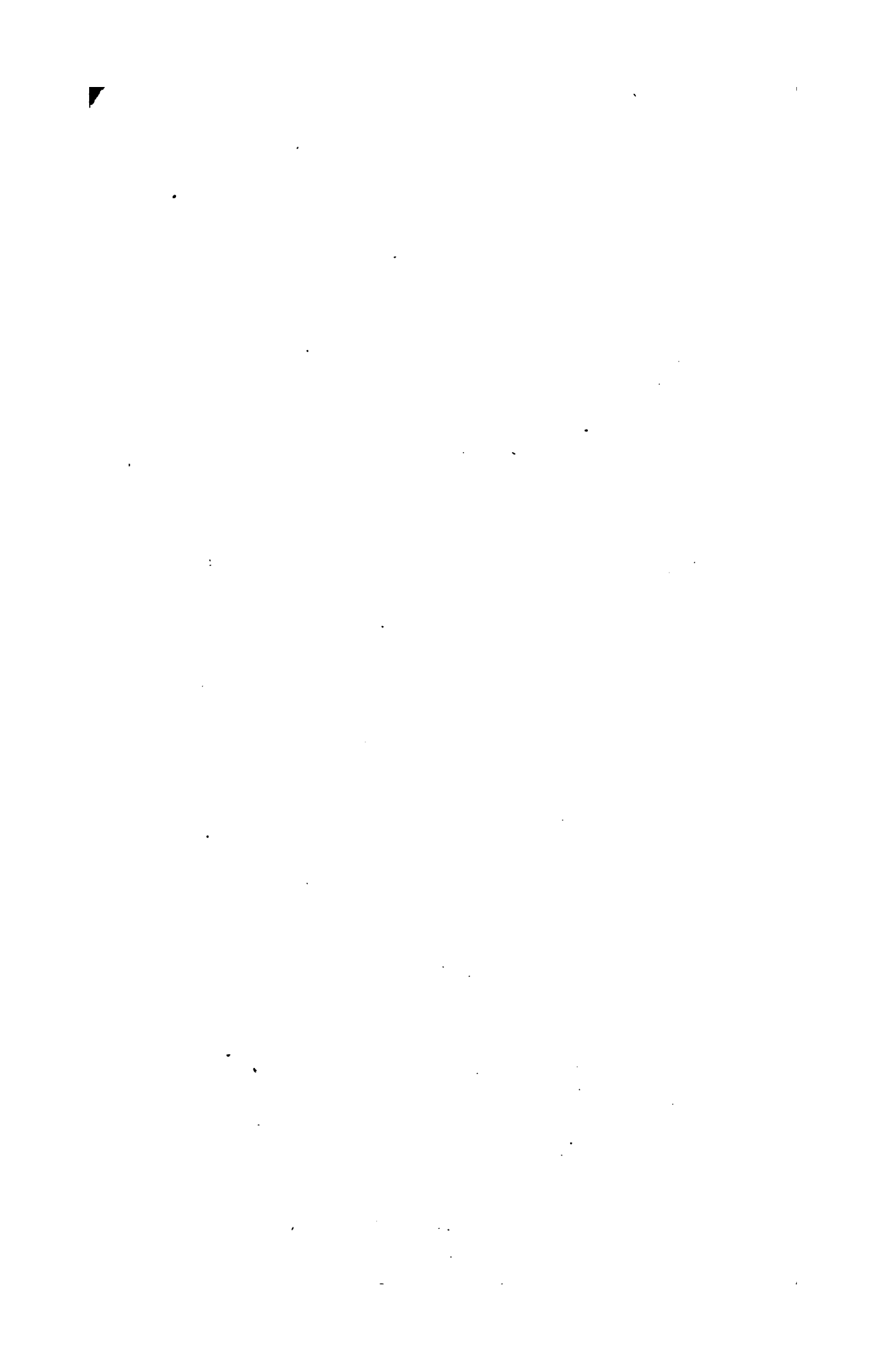
Made to the Legislature, March 29, 1849.

ALBANY :

WEED, PARSONS & CO., PUBLIC PRINTERS.

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1849.



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JOHN CAMPBELL, } *Vice Presidents*.
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Wm. C. Arthur.**

State of New-York.

No. 244.

IN ASSEMBLY, MAR. 29, 1849.

ANNUAL REPORT OF THE AMERICAN INSTITUTE.

NEW-YORK, March 27th, 1849.

To the Honorable

AMOS K. HADLEY,

Speaker of the House of Assembly, New-York.

SIR—I herewith transmit the Annual Report of the American Institute of the city of New-York for the year 1848.

Respectfully, your obedient servant,

JOHN W. CHAMBERS, *Acting Secretary.*



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SEVENTH ANNUAL REPORT

OF THE TRUSTEES OF THE AMERICAN INSTITUTE OF THE
CITY OF NEW-YORK, MADE MARCH, 1849.

The Trustees of the American Institute of the city of New-York, in conformity to law, herewith present to the New-York State Agricultural Society a report of their proceedings for the past year, being their seventh annual report.

The great interest which the public have evinced within the last few years, not only in the annual fairs, but in the intermediate operations of the Institute, enforce upon the trustees the duty of reporting for general information, all the transactions which can be useful to the great agricultural, commercial, and manufacturing interests of this country.

Before entering upon details, the trustees feel themselves bound, alike from a sense of justice and regard, to advert to the great loss which the Institute has recently sustained in the death of their Corresponding Secretary and Superintending Agent, Mr. Thaddeus B. Wakeman. This gentleman was so long and intimately connected with the American Institute, that no person in any section of the country can have heard of the one without being familiar with the other.

The projectors of the Institute, among whom was Mr. Wakeman, like those of every other novel undertaking, had numerous obstacles to contend with. Their enterprise was denounced as chimerical and visionary. Public annual fairs were regarded as transatlantic schemes for vending of commodities, productions, &c., especially adapted to the degraded artizans and laborers of Europe, but altogether unsuited to

the republican atmosphere of these United States. The emulation which was destined to be excited among the infant manufactories of our country, by a concentrated exhibition of American productions, and the benefits that would flow therefrom, were only appreciated by a few individuals, among whom were the founders of the American Institute. With so little favor, indeed, was it regarded by the public, that a private subscription was resorted to to get up and defray the expenses of the first fairs. The result of their earliest exhibitions, although by no means flattering, were not discouraging, and those sanguine gentlemen were determined not to look back, but to press forward with renewed energies in the noble work.

In tracing the Institution from its infancy, it is impossible to avoid the conviction that its success and present high standing are mainly, if not altogether, attributable to the indefatigable energies and persevering exertions of Mr. Wakeman.

The Trustees cannot permit a person so intimately identified with the American Institute as was Mr. Wakeman, to pass from the field of his labors and usefulness without this tribute of respect to his memory and worth.

That the American Institute and its officers should have found enemies, and even calumniators and detractors, is not a matter of surprise. Such returns are common to all successful efforts of genius and enterprise. They could not, of course, condescend to notice any of the many charges which have been made upon them through some of the public papers. The usual methods of attack were resorted to, such as vague and indefinite insinuations—mysterious inquiries as to the disposition of the large amount of money received at the annual fairs—pretended discoveries, and promises of disclosures of fraud and speculation, &c., &c.

Now, if it be not already known to the world, the trustees take this occasion to reiterate the truth, that the American Institute has no secrets, but, on the contrary, particular pains are taken to give publicity to all their transactions.

Every member knows, or ought to know, that by a standing rule, before any bill can be paid, the same must be presented to the finance committee, who examine into its correctness, and if found to be cor-

rect, they certify it accordingly. These certified bills are then presented by the finance committee to the Institute at a regular meeting, there read over, explained and passed; an appropriation is then ordered of the necessary amount to discharge said bills, and without the formality of a previous appropriation, by a vote of the whole body, no money can be taken from the treasury.

The accompanying documents will indicate to the Legislature the character and extent of the operations of the Institute since the last annual report, and will also show that it has received from the public not merely a continuation, but a large increase of patronage and confidence. The judicious application of the pecuniary means supplied by the Legislature and the public, being generally held the best evidence of correct management, the annexed statement of receipts and expenditures for the past year is therefore first submitted. The amount embraces the period from the 1st of February, 1848, to 1st of February, 1849.

RECEIPTS AND EXPENDITURES.

Receipts.

To cash received from sales of tickets at Castle Garden,.....	\$17,265 00	
Less, counterfeit money,.....	30 00	
	<hr/>	
	\$17,235 00	
To cash rent of stands in selling department,	311 00	
	<hr/>	\$17,546 00
To cash contributed by members,.....		1,807 00
" interest on city stock,.....		570 00
" " deposit in bank,		150 43
To cash from Treasurer State of New-York, under act of May 5, 1841,		950 00
		<hr/>
		\$21,023 43
Balance on hand at the date of the last report, February, 1848,		
In city stock,.....	\$7,000 00	
	<hr/>	
Carried forward,	\$7,000 00	\$21,023 43

Brought forward,.....	\$7,000 00	\$21,023 43
In bank,	5,000 00	
In hands of the treasurer,.....	2,325 37	
		<u>\$14,325 37</u>
Total,		<u><u>\$35,348 80</u></u>

Expenditures.

Payments on account of the 21st Annual Fair of the American Institute.

By Printing and Publication Committee.

Printing circulars, invitations, tickets, blanks, handbills, badges, &c.,.....	\$427 60	
Printing addresses, and Reports	469 83	
Newspaper advertisements, flags for stages, bill-posting, stationery, &c.,.....	350 63	
		<u>\$1,248 06</u>

By Committee of Arrangements.

Erecting new building for machinery,....	\$1,123 40	
Carpenters' work, fitting up garden and covering bridge,	693 07	
Steam powers, new shafting, repairs of boiler, fuel, &c.,	1,047 24	
Lighting, gas, oil, and camphine,.....	756 58	
Clerk hire, assistants, and laborers,....	539 00	
Agricultural and horticultural department expenses,	414 55	
Pomological Convention expenses,.....	112 33	
Muslin for tables, glazing cases, cartage, freight, &c.,	136 09	
Petty expenditures,	97 10	
		<u>4,919 36</u>

By Police Committee.

Police, day and night watch,.....		360 00
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By Finance Committee.

Ticket sellers and receivers,.....		<u>216 00</u>
Carried forward,	\$6,743 42	

Brought forward, \$6,743 42

By Committee on the Anniversary Address.

Rent of Broadway Tabernacle,.....	\$75 00	
Orator, music, &c.,.....	196 00	
	<hr/>	271 00

By Committee on Refreshments.

Dinners for managers while detailed on duty, and guests from a distance,.....	\$250 00	
Refreshments for judges at cattle show,..	88 50	
“ musicians &c.,.....	65 50	
	<hr/>	404 00

Miscellaneous Bills.

Rent of Castle Garden 16 days, at \$75,.....		1,200 00
Fireworks,		127 66
Expenses of orators during the Fair,		74 00
Bands of music at Castle Garden,		122 00

By Premium Committee.

Gold and silver for medals, and striking,	\$1,549 01	
Silver cups, plate, &c.,	415 50	
Engraving,	238 25	
Printing and filling up diplomas,	234 68	
Books for premiums,	161 14	
Cash premiums,	383 75	
Medal cases,.....	107 50	
	<hr/>	3,089 83

Total expenses of Fair,		<hr/> <hr/> \$12,031 91
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On account of Repository and Library of the American Institute.

Salary of superintending agent,.....	\$937 50
“ recording secretary,.....	350 00
“ clerk,	700 00
“ assistant librarian and messenger,.....	379 00
Insurance on library,	25 50
Books and periodicals for library,.....	111 37
Newspaper subscriptions,.....	68 00
Advertising,	7 50
Binding for library,	69 00
Printing and stationery,.....	40 63
Light, lamps and candles,.....	48 60
Fuel,.....	26 00
Iron safe,	100 00
Freight and duties on books in London,.....	19 33
Freight,	3 37
Expenses of removing office,.....	64 78
Crape for Secretary's funeral,.....	8 00
Rent, of office No. 333 Broadway, 3 months,	250 00
Cloth for tables, and mats,.....	6 50
Transactions,	5 00
Painting, plastering, and carpenter's work,.....	15 47
Door plate,.....	1 50
Directory,	2 25
Repairs of stoves,.....	1 13
Expenses of Farmer's Club,.....	86 67
Agent's expenses at Albany, in relation to Agricultural school,	90 00
Petty cash expenses, postage, subscription to small papers, cleaning, &c.,.....	206 91
	<hr/>
Total expenses of repository and library,.....	\$3,623 01
	<hr/> <hr/>

RECAPITULATION.

Receipts.

To cash received from January 20, 1848, to January 20, 1849,	\$20,073 43
To cash received from Treasurer of the State of New-York,	950 00
	<hr/>
	\$21,023 43
Balance on hand at the date of the last report, February 1, 1848,	14,325 37
	<hr/>
Total,	\$35,348 80

Expenditures.

By disbursements 21st Annual Fair,	\$12,031 91
" repository and library, ..	3,623 01
	<hr/>
	\$15,654 92
	<hr/>
Balance on hand,	\$19,693 88
	<hr/> <hr/>
Invested in Bonds of the city of New-York at 6 per cent,	\$11,000 00
Invested at interest in bank,	6,000 00
In hands of the treasurer,	2,693 88
	<hr/>
	\$19,693 31
	<hr/> <hr/>

The twenty-first annual fair of the Institute, which was held at Castle Garden in October last, exceeded every former fair in the number, variety, and quality of the articles exhibited, in the number of visitors which it attracted, and in the interest which so large a display of American industry, ingenuity, and practical skill is so well calculated to excite. As a natural result of the character and extent of the fair, the number and value of the premiums awarded by the managers are as follows:

55 Gold Medals.
61 Silver Cups.

298 Silver Medals.

450 Diplomas.

\$120.50 Cash to apprentices and minors.

25.00 Awarded for team of oxen, \$25 Knapp Premium.

130 Volumes of books on Agriculture, Horticulture &c.

The total cost of which, is, \$3,689.83

Among the subjects which have occupied the attention of the Institute, Agriculture and Horticulture have during the past, as in previous years, held the most prominent place. The regular meetings of the Farmers' Club, have been increasing in interest and continued with energy. The Plowing and Spading exhibition at White Plains was well attended. The attendance at the Cattle Show on the 11th and 12th of October, evinced the increasing interest which breeders feel in learning when and by what means their stock of horses, horned cattle, sheep, and other domestic animals may be improved.

While speaking of this part of our labors, we beg leave to state to the Legislature that each succeeding year has added strength to our opinion of the importance of an agricultural school and experimental farm for the purpose of extending earlier and more widely the benefits which science and mechanical skill are destined to confer upon the tillers of the soil. We forbear to repeat the arguments heretofore urged in favor of establishing and endowing such an institution, or the substantial reasons which have been adduced in favor of its being fixed in the neighborhood of the city of New-York. These are fully set forth in our last report, to which we beg leave to refer.

For the purpose of showing more in detail the operations of the Institute, in relation to the various departments of domestic industry to which it is devoted, we annex the report of the Managers of the Twenty-first Annual Fair, sundry reports by committees of the Farmers' Club, and special committees appointed by the Institute, together with some extracts and translations of articles from foreign works relating to subjects of general interest, or calculated to diffuse useful information on some of the great branches of American Industry.

Respectfully submitted, by order of the trustees.

JAMES TALLMADGE, *President.*

H. MEIGS, *Rec. Sec'y.*

New-York, March 23, 1849.

REPORT OF THE BOARD OF MANAGERS

OF THE TWENTY-FIRST ANNUAL FAIR.

The Board of Managers of the twenty-first annual Fair of the American Institute, respectfully

REPORT:

That in conformity with the annexed circular, the Fair was opened at Castle Garden on the third day of October, and was continued until the twentieth of the same month. The number of visitors was greater than at any previous fair, and the articles exhibited were more numerous ; many of them of a new and useful character. The number of entries on the books were in the

Mechanical and Manufacturing Department,.....	2,173
Agricultural and Horticultural department at Castle Garden,	217
At the Cattle show, Washington Drove Yard,.....	183
	<hr/>
	2,573

The Managers, by a resolution of the Institute, erected a building on the outside of the Garden wall for the purpose of a machine room. The display of machinery was far superior to any preceding it. If the building had been longer it could have been filled, as a number of valuable machines could not be properly seen nor brought into operation. The next Board may find it necessary to enlarge this building for the accommodation of exhibitors and visitors. This portion of our exhibition is a great and interesting feature of our fairs and should be encouraged.

The Agricultural and Horticultural department, under the direction of Messrs. Thomas Bridgeman and Peter B. Mead, was, as usual, conducted with judgment and taste, and was a centre of attraction to visitors. The able report of these gentlemen is hereunto annexed.

The National Convention of Fruit Growers met during the fair, at Clinton Hall, under the auspices of the Institute. Delegates were present from twelve states, viz: Massachusetts, New-York, Pennsylvania, New Jersey, Delaware, Kentucky, Missouri, Virginia, Ohio, Connecticut, Rhode Island and Vermont. The display of fruits was perhaps of greater variety than had ever been exhibited in this city, and the proceedings were of a most interesting character. A full report has been printed and is annexed. Another convention of the same kind will be held during our next fair, and doubtless with increased success.

The Cattle Show, &c., was held at the new Washington Drove Yard in 44th street, between 4th and 5th Avenues; the exhibition was free to visitors, and was well attended. The entries were as follows:

28 Horses,	6 Mules and Jacks,
83 head of Cattle,	30 pair of Poultry,
52 Sheep,	5 Shepherd Dogs,
40 Swine,	

The premiums awarded in this department were as follows:

20 Silver Medals,	11 Agricultural Books,
40 Silver Cups,	\$25 cash,
32 Diplomas.	

By a rule adopted by the Managers, persons to whom cups or medals were awarded in the Agricultural and Horticultural departments may receive their value in plate or money.

The Ploughing and Spading matches were held at White Plains, in connection with the Society of Agriculture and Horticulture of Westchester county during their exhibition. An address was delivered on the field, by Robert Bolton, Jr., Esq., of East Chester.

The Premium Committee, of which Mr. Joseph Torrey is chairman, had a most onerous task to perform, but it has been well attended to; very few complaints have been made, which is strong evidence the committee has well understood and discharged its duties. They have awarded premiums as follows :

Gold Medals,.....	55
Silver Medals,.....	298
Silver Cups,.....	59
Diplomas,.....	450

Cash to apprentices and minors,.....	\$120.50
Cash awarded for team of oxen,.....	25.00
The Knapp premium,	25.00
and 130 volumes of books on Agriculture, Horticulture, &c., as follows:	

Vol's of Bement's American Poulterer's Companion,	5
Cock's American Poultry Book,.....	4
Colman's European Agriculture,.....	3
Washington's Agricultural Correspondence,....	5
Washington's Letters on Agriculture,.....	1
Transactions of the American Institute,.....	28
Transactions of the New-York State Agricultural Society,	13
The Farmers' Library,.....	3
Gardner's Farmers' Dictionary,.....	2
Bridgeman's Young Gardener's Assistant,.....	13
The American Agriculturist,.....	7
The New-York Farmer and Mechanic,.....	5
The Albany Cultivator,.....	5
The Monthly Journal of Agriculture,.....	1
Hovey's Magazine of Horticulture,	4
Downing's Horticulturist,.....	3
Prince's Pomological Manual,.....	3
Downing's Fruits and Fruit Trees of America,..	5
Hovey's Fruits of America, (Nos).....	20
Hoar's Treatise on the Vine,.....	1
Kenrick's New American Orchardist,.....	4
Boudoir's Botany,.....	1
The American Flower Garden Directory,.....	3
Mrs. Loudon's Ladies' Flower Garden,	2
The American Flora,.....	4
Parsons's Manual of Roses,.....	3
Prince's Manual of Roses,.....	3
Downing's Landscape Gardening and Rural Architecture,.....	2
Bridgeman's Florists' Guide,.....	1
Browne's Trees of America,.....	2

The Finance Committee, of which Mr. James Van Norden is chairman, have discharged their duty with the greatest attention. For a statement of the receipts and expenditures of the Fair, see the report of the trustees.

The sum of \$500 was appropriated by the Board to be awarded as premiums in sums of from three to ten dollars, to apprentices and minors, exhibiting work of their own of a meritorious character. A number of these exhibitors were in competition and the sum of \$120.50 was awarded to twenty-two of those whose productions were considered by the judges of competent merit. It is believed that if this offer be continued it will be productive of much good as an incentive to the youth of our country, to emulation in their differing occupations. When these premiums are more generally known, the competitors will be more numerous. It is hoped it may be continued by future boards.

The expenses of the late Fair have been greater than those of any previous one; but part of that expense, about \$1,800, was incurred by the erection of the building for machinery, and new shafting, pullies, &c., which, however, is an investment of the Institute for succeeding fairs, and will eventually be a saving. The shafts and pullies are permanently placed, thereby saving the expense of fitting up and removing them at every fair, and are always ready for use when required. A portion of the building is also used for the storage of the lumber and other property of the Institute used at the fairs.

The opening address was delivered at Castle Garden, by the Rev. John O. Choules, of Newport, R. I., and was worthy of his well known ability. The anniversary address was to have been made by the Hon. Washington Hunt, but dangerous illness in his family prevented the performance of his undertaking. The managers, at short notice, were obliged to supply the place of Mr. Hunt; and fortunately obtained the services of the Rev. Stephen H. Tyng, of this city, whose very eloquent address met with pre-eminent success. The president, the Hon. James Tallmadge, closed the fair with an *extempore* address at Castle Garden, and then, as often before, ably commented on the great subject of American Industry.

The confidence of the public in the Institute, appears to increase, if we may judge by the additional number of visitors and by the sa-

tisfaction evinced at the display of industry and skill of our fellow citizens. We have but to continue our course as hitherto without stooping to speculation or experimental objects of any kind or description, and our march is onward. We find ourselves sustained by the public, and our reward will be in witnessing the growth, importance and success of the American Institute.

In the death of the late superintending agent, Thaddeus B. Wakeman, the Institute has sustained a loss not easily repaired. The board in the absence of that gentleman from the late fair, in consequence of his illness, felt that loss seriously. Much additional business consequently was thrown on the attentive and obliging clerk, Mr. John W. Chambers, who during and since the fair, has devoted himself entirely and perseveringly to the interests of the Institute. The Board feels much indebted to him.

ROBERT LOVETT, Chairman.

CIRCULAR.

The Managers now present to the public some of the general arrangements, adopted for the twenty-first annual fair.

Exhibitors of specimens for premiums, excepting cattle and other live stock, agricultural and horticultural productions, &c., hereafter noticed, are required to bring them to the Garden, and obtain a certificate from the clerk of the fair, on Friday or Saturday, the 29th and 30th days of September, previous to the opening of the exhibition.

PROGRAMME OF THE FIRST WEEK.

Monday, Oct. 2.—Will be appropriated for the arrangement of the contributions. Vegetables, fruits, and flowers for the horticultural room, should be brought this day before 12 o'clock.

Tuesday, Oct. 3.—The exhibition will open to the public at 9 o'clock A. M., and continue till 10 P. M., through the fair. The opening address will be delivered this evening, at 7½ o'clock, in the Garden. A band of music will play during the evening. At 9 o'clock a grand display of fireworks.

Wednesday, Oct. 4.—The steam engine, with moving machinery, will be in operation, and continue during the exhibition. Bands of music daily, as usual.

Thursday, Oct. 5.—Ploughing and Spading matches at White Plains, Westchester county, N. Y., in conjunction with the Society of Agriculture and Horticulture of Westchester county. An address on the field.

Saturday, Oct. 7.—Fireworks this evening at 9 o'clock.

PROGRAMME OF THE SECOND WEEK.

Monday, Oct. 9.—Cattle and other live stock to be exhibited on Wednesday, must be entered on the books this day, and the pedigrees delivered to the clerk at the committee room, at the Washington Drove Yard Hotel, in 44th street, between 4th and 5th Avenues.

If previously sent to T. B. Wakeman, the corresponding secretary of the Institute they will be attended to.

Great show of choice roses and dahlias to day at 12 o'clock, at Castle Garden, for special premiums.

Tuesday, Oct. 10.—The great Central Convention of fruit growers will meet this morning, at 11 o'clock A. M., at Judson's Hotel, 61 Broadway. Address on agriculture at the Garden this evening, at 7½ o'clock.

Wednesday, Oct. 11.—The Cattle Show opens at 9 o'clock, A. M., at the spacious premises known as the Washington Drove Yard, in 44th st., between 4th and 5th Avenues, when all the animals must be on the ground.

Thursday, Oct. 12.—Second and last day of the Cattle Show. Anniversary address at the Broadway Tabernacle at 7½ o'clock, P. M. Music by an accomplished choir, under the direction of Mr. George Andrews.

Saturday, Oct. 14.—Pyrotechnic exhibition, in competition for premium, at 9 o'clock P. M. Each exhibiter will be required to fire three pieces. Entries to be made on the books before 12 o'clock.

The programme of the third week will be published the latter part of the second week.

Notices of aquatic exhibitions, addresses and other interesting exercises and displays, in addition to those named above, occurring from day to day, will be published in the city papers.

All contributors are earnestly desired to bring their articles early on the receiving days, as it will increase their claims to the best locations, enable the managers to open the fair more perfectly arranged, particularly operating machines, as time is required to adjust and fit their connection with the propelling steam power.

Each exhibitor is requested to hand to the clerk at the time of entry, the name of the article, the name and residence of the manufacturer, and by whom sold, distinctly written; it will facilitate the completion of a full and perfect catalogue, be satisfactory to visitors, and useful to the contributor; but to insure impartiality from the judges, it should not appear on the article until the decision is made by them; also, a written description, and the process of fabricating or producing, if peculiar, and particularly of labor-saving machines, as sometimes the object and uses of important improvements have escaped the attention of the judges.

The best pure blood live stock, of well-authenticated pedigree, should be scrupulously attended to. Economy will warrant their being procured and preserved for breeding, by care and cost which would be deemed by many extravagant. By equal care, no doubt our *Merino Sheep* would produce fleeces equal to those grown in *Saxony*. We are indebted to Charles L. Fleischmann, Esq., for his comprehensive statement of the mode of rearing Sheep, derived from observations during his late tour through that country. To produce equal health in Sheep, and fineness of wool, proper food, stabling, and constant care is necessary. If we ever expect to compete with the careful Germans in the finer specimens of wool, increased attention to breeding, feeding, and sheltering Sheep is obvious. Wool growers are requested to bring their best specimens for comparison with the best specimens of German wool, deposited in the Institute for that purpose.

To awaken genius and sharpen competition, premiums of reward for merit, in number and value unprecedented by any other similar Institution, have been awarded. Within the last three years they have numbered 2,635. To reach the varied occupations of industry and art, and to give effect to the premiums, the collection of exhibit-ed articles is required to be very extensive.

The rent paid by the Institute, and the annual cost of fitting up places of exhibition, with the necessary expenses for the services of hired men, receiving and delivering of articles, &c., all necessary to carry out the system of premiums, have amounted the last three years to \$28,527. More than \$25,000 of the above sum, by great economy, has been supplied from the direct earnings of the Institute. Besides this, a portion of the income has been appropriated to purchases:

for the library, a steam boiler and accompaniments, fixtures, &c., and to the fund intended for an edifice. These forming the permanent property of the Institute, now amount in value to \$20,000. All has been derived from a generous public, who have not only cheerfully contributed, but at the same time shielded the Institute from the occasional unmerited aspersions, which never fail to be directed against every successful institution for great and good purposes. The amount of expenditures for premiums, &c., will be increased the coming Fair, and distributed among all occupations—to the most meritorious in each, as it would be invidious to exclude particular occupations, though deemed by some of minor importance, when all are necessary for a perfect condition of civilized society.

The Board of Agriculture specify in their Circular a great variety of premiums for cattle and other live stock. Among which, the working ox, that justly ranks with the most useful of animals, has not been overlooked. The following premiums are offered:

For the best yoke of Working Oxen, presented by the owner and breeder, Silver Cup, \$15.

For the 2 best yoke of Working Oxen, without restriction, Silver Medal.

For the best team of Oxen, consisting of not less than 5 yoke, from one county, \$25.

And the products of the farm, including those of the orchard, the vineyard and the garden, to which reference is had. The following premiums will be awarded on the reports of the committee on Field Crops:

FARMS AND GARDENS.

For the best Farm offered for Premium, of not less than 200 acres,

Silver Cup of \$15 or its value.

For the best Farm do of not less than 100 acres,

Silver Cup of \$15 or its value.

For the best Farm do of not less than 25 acres,

Silver Cup of \$15 or its value.

For the three best Market Gardens, to each a Cup of \$10.

For the best cultivated and most tastefully arranged Flower Garden,
Silver Cup, \$10.

For the 2d best do do do Silver Medal

Farmers, Gardeners, and Amateurs wishing to compete for the foregoing premiums, must give notice in writing to T. B. Wakeman, the Corresponding Secretary of the Institute, on or before the 12th day of August next.

A committee from the Board of Agriculture will visit each farm as soon as practicable after such notice.

Any extraordinary crop, within convenient distance, will, on notice, be visited by the committee on Field Crops, and a report made thereon, which will be submitted.

The premiums will be increased in number and value on dairy productions, culinary vegetables, and also those intended for feeding stock, and on fruits and flowers.

For the purpose of turning public attention to the inestimable value of a domestic supply of fine wool, which can only be obtained with great care and attention, from pure blood Sheep, the Managers have resolved on the following premiums, viz:

For 25 Fleeces of the finest and best American Wool for Clothing,			Silver Cup, \$15.
For 25 Fleeces of the 2d	do	do	Silver Cup, \$10.
For 25 Fleeces of the best American Wool for combing,			Silver Cup, \$15.
For 25 Fleeces of the 2d	do	do	Silver Cup, \$10.

And as a steady and adequate home market will afford the best encouragement for the expenditures and care requisite to such supply of the finest fleeces, and as such home market can be created only by the manufacturers, to increase competition among them, the following premiums on woolens made of domestic Wool, have been adopted, viz:

For the best specimen of Broadcloths, not less than 75 yards, made exclusively from wool grown in the United States,			Gold Medal.
For the second best,	"	"	Silver Cup, \$8.
For the third best,	"	"	Silver Medal.
For the best specimen of plain Cassimeres, as above,			Gold Medal.
For the second best	"	"	Silver Medal.
For the best specimen of not less than 75 yards, &c., of Fancy Cassimeres,			Gold Medal.
For the second best	"	"	Silver Medal.

For the best and second best specimens of Broadcloths, and plain and fancy Cassimeres, made altogether or in part from foreign wool, a Diploma for the skill in manufacturing.

Cloths and Cassimeres, if exhibited for premiums, must have no marks whereby the judges can know by whom they were made. After the judges have passed upon them, the owners or agents can place their labels upon them.

For the purpose of exciting emulation and improvements among the ingenious youth of our country, during their apprenticeship, \$500 have been appropriated to be bestowed in premiums for work of apprentices or minors, to embrace all the objects of art and industry for which the Institute offers premiums.

Each apprentice or minor will be required to bring a certificate from his employer, or some responsible person, stating the age of the apprentice or minor, and that the work is entirely his or her own. A separate list of work will be kept, so that minors shall compete with minors only, and not with experienced and finished workmen.

Discretionary premiums in money, from three to ten dollars, with a diploma, will be awarded to apprentices or minors for all meritorious articles. It is anticipated that a full share of these prizes will be won by the young ladies. The ingenuity, delicacy, brilliancy, and utility of their fabrics, have never failed to command the admiration of the visiting multitudes, and always rendered the place assigned for them a centre of attraction.

The Managers therefore appeal to the ladies for a continuance of their noble spirit in a glorious cause, calculated to refine and exalt society, and solicit their presence, and invoke their special patronage for the Twenty-first Annual Fair.

Premiums contributed by individuals to promote objects deemed by them worthy of special encouragement.

THE VAN SCHAICK PREMIUM.

The annual premium of \$100 for Silk, given by the Hon. Myndert Van Schaick, will be awarded at the Twenty-first Annual Fair, Oct. 1848, as follows:

The Silk to be the growth of the United States, and to be manufactured within the year.

For the best piece of silk, 27 inches in width and 60 yds. in length,	\$50
do do for handkerchiefs, 20 yds. do	10
do Silk Velvet, not less than 10 yds.,.....	10
do exhibition of Silk ribbon, not less than 12 pieces, of 10 yards each,.....	10
For the best reeled Silk, not less than 10 lbs.,.....	10
do bushel of Peanut Cocoons,.....	5

A bronze medal will accompany each premium.

PREMIUM OFFERED BY GEN. TALLMADGE.

For the best piece of Linen, not less than 30 yds. A Gold Medal.

PREMIUM OFFERED BY SHEPHERD KNAPP, Esq.

For the best Farm Cart, combining strength of material with lightness of draft. The cost will be taken into consideration, (with privilege of purchasing, with the premium added,)..... \$25

PREMIUM OFFERED BY A RESIDENT OF NEW-JERSEY.

For the best Essay on Linen,..... \$25

PREMIUM OFFERED BY R. L. PELL, Esq.

For a Fat Ox that shall weigh alive 3,500 lbs., a piece of plate of the value of..... \$50

PREMIUM OFFERED BY MATTHEW H. CHASE, Esq.

For a Fat sheep that shall weigh when dressed 200 lbs., A piece of Plate of the value of..... \$50

Gentlemen who may deem any article worthy of special encouragement, and are willing to contribute for that purpose, may be assured of a faithful discharge of the trust by the managers. Address the Corresponding Secretary.

There is one invariable rule adopted by the Institute, to withhold premiums wherever the articles possess no extraordinary merit, whether there are others in competition or not. The want of competition will not, in cases of extraordinary merit, debar the exhibitor from a premium. In such cases the managers will use their discretion.

The managers are satisfied that conventions of delegates from other Cities and States for deliberating on subjects of public interest are attended with beneficial results.

Former conventions have repeatedly called attention to the farewell advice of Washington in relation to a home department for agriculture, which, it is believed, has had the effect of awakening public feeling, and induced steps to be taken by the appropriate committee in Congress, to establish the long wished-for department, so repeatedly and earnestly sought for by this Institute.

For a number of years the Institute has been zealously engaged in collecting and distributing grafts of choice fruit, especially of new and valuable seedlings; in view of this and the favorable position of our city, and the vast collection of people from all parts of the country, a number of leading societies and horticulturists in this and other states have recommended that a convention of fruit growers be held during the coming fair. Thinking a compliance with these wishes may be productive of great public good, the managers have fixed on Tuesday, the 10th day of October, at 11 o'clock, as the day for holding this convention, and invite the horticultural societies and kindred associations, in all parts of the United States, to send delegates with the best fruit grown in their vicinity, particularly all new and valuable seedlings, carefully packed and labelled, so as to present them in perfect condition. A special circular on this subject from the societies will be issued in a few days, to which reference is made.

The managers have determined to spare no trouble or expense in providing suitable places for their exhibitions; they have procured for their general display of the productions of agriculture and horticulture, manufactures and the arts, the spacious building known as Castle Garden, affording one great room 600 feet in circumference, and 60 feet high, perfectly secured against storms; and for the purpose of giving greater accommodation, the operating machinery, which has heretofore occupied a part of this room, will be placed in a building adjoining erected for the purpose, 150 feet long and 25 feet wide. The interior of the Garden having undergone improvements since the last Fair, gives additional room, and adds to the conveniences. The bridge, containing 6,540 square feet, will be covered with a tight roof, and will be devoted to carriages, sleighs, wagons; agricultural machinery, hydraulic apparatus, &c.

For the Cattle Show, the new establishment called the Washington Drove Yard, has been secured, situated in 44th-st. between 4th and 5th Avenues, containing about 30 acres of land, 3 of which are cov-

ered with pens, &c. ; each pen is supplied with the Croton water, and ample commodious stables. This location will at all times be within omnibus reach.

For the Ploughing and Spading matches, the pleasant village of White Plains has been selected. These matches will be conducted in conjunction with the Society of Agriculture and Horticulture of Westchester County.

The motives for greater exertions at this anniversary, are presented from the effects produced by the revolutionary spirit which convulses Europe. Labor is suspended, production lessened and competition diminished, while the people are engaged in organizing governments. The waste of armies will increase the demands for our productions. Revolution may follow revolution for years. This unsettled condition of things will bring emigrants with capital and skill to our country, who will be employed in extending improvements, augmenting production, and making this the great granary and storehouse of a large portion of Christendom. An occasion is afforded when associations like this can do much towards pushing on improvements, and multiplying the means of successful competition and national wealth. In connection with our beautiful uplands and rich alluvials, our waterfalls, our exhaustless coal, iron, and varied minerals, with cheap steam power ; the variety and abundance of materials for sustenance and fabrication ; the facilities for intercourse and transportation on our extended sea-coast and inland seas, rivers, canals, and railroads, with the concentrated enterprise, skill and invention of the old and new world, vigorously exerted under a firmly settled government of equal rights, are presented prospects surpassing those enjoyed by any other land on which the sun ever shone.

Hitherto, at periods far less propitious, invitations in the name of the American Institute have never failed to produce a rally among the great industrial classes. On the shortest notice they have come loaded with contributions that have filled our saloons, and crowded our avenues to overflowing. The spirit of improvement, incited by competition, has been moved over more than one half of the Union, as former exhibitions have shown. Farms, gardens, factories, and workshops, far and near, have furnished their choicest productions of nature and art, to complete the variety, beauty and splendor of our an-

nual displays. These have been continued for 20 consecutive years, with unremitting zeal, each exhibition excelling its predecessor, from the one first held in a single comparatively small apartment at Masonic Hall, till now, at Castle Garden, one of the largest rooms in the world. From analogy, we have a right to anticipate a more full and imposing display than on any former occasion. We therefore, in full confidence, invite our fellow-citizens to come and witness an exhibition of higher interest than has ever been presented before, in the unnumbered specimens, the evidences of our progress and perfection in industry and inventions, and in all the arts that contribute to our individual comforts and national prosperity. The scientific and learned, the statesman and philosopher, the farmer, mechanic and artisan, the merchant and professional man, will all find abundant materials for examination, reflection, instruction and admiration, and no one can leave the Garden without increased knowledge, and no American without a heart more than ever glowing with pride and patriotism, that what he has seen, are all the productions of his own native land.

HORTICULTURAL REPORT.

TO THE MANAGERS OF THE TWENTY-FIRST ANNUAL
FAIR OF THE AMERICAN INSTITUTE, OCTOBER, 1848.

In opening their report, the undersigned congratulate the friends of the American Institute on the auspicious close of its twenty-first Annual Fair, by far the most satisfactory and interesting exhibition of a like nature ever seen in New-York, and perhaps not surpassed by any similar exhibition ever held in the United States.

Allusion has elsewhere been made to the fact, that the American Institute has now arrived at man's estate ; and this fact becomes the more interesting from the happy circumstances under which it has been ushered in. Yes, it is even so : after a youth characterized by a manful struggle with many adverse circumstances, and a persevering devotion to the best interests of domestic industry, the American Institute has arrived at that period of existence when it can rightfully assume the *toga virilis* ; and it may safely be said that the Institute is now more able than ever to take under its protecting care all the various interests of the arts and sciences, as developed by American industry, ingenuity and skill.

It has been confidently asserted by persons not well disposed to the Institute, that each succeeding exhibition has been a falling off from the last, and this, too, in the face of the most convincing proofs that the fact is far otherwise ; and these same individuals, actuated by feelings of personal animosity, have confidently and perseveringly predicted for a series of years, that the *next* exhibition would certainly be the last ! But they have been most egregiously mistaken, as the

event in every instance has falsified their predictions, and the present one most remarkably so. It may be asserted without fear of contradiction, that never has there been an exhibition in New-York which would compare with the one which has just closed; and as some evidence of this, it may be stated that its contributors numbered upward of *two thousand three hundred and fifty*, some of whom had more than a hundred specimens on exhibition, each a distinct variety. That the public know how to appreciate these things is apparent from the immense concourse of people who thronged Castle Garden during the three weeks of the Fair.

Another class of disparagers profess their inability to comprehend why the American Institute should charge the sum of twenty-five cents for the "privilege of admiring the last newly-invented shoe-tie, or looking upon an almighty big squash," and say that the great difference between fairs in Europe, both ancient and modern, and those of the American Institute, is, that the former never thought of taking money for admission, and that the latter is the first that ever did so. This is purely gratuitous; but these persons seem to know about as little in regard to the one as to the other, and altogether overlook the important fact, that the former were got up for the purpose of *traffic*, and frequented by merchants and others for the sale of their wares. It would, however, be an easy matter to show that not only exhibitors, but also buyers and spectators, had to pay for their privileges, and sometimes pretty dearly too; but, in fact, the objects of the two bear no resemblance to each other, and there is little use in noticing arguments conceived in a spirit so deeply tinged with prejudice.

The undersigned will attempt to set this matter right, so far as concerns the Horticultural department, by instituting a brief comparison between this and preceding fairs, premising, however, that fears were entertained, owing to the unpropitious season, that there would be some falling off on the present occasion; especially was it apprehended there would not be a supply of flowers sufficient to render the Horticultural department as attractive as at some former exhibitions, with how much justice will presently be seen. It is well known that the unusual and long continued drought of the past season was very injurious to vegetation of every description, and that the inmates of the flower garden suffered alike with the products of the vegetable garden and the field. Every where crops presented a burned and

stunted appearance, and it was thought that some would prove an entire failure. Here and there a few ghostly-seeming flowers might be seen struggling for a short-lived existence, but, as a general thing, no sooner did one of these charming little favorites of Nature venture to expand its petals and give its sweetness to the air, than the overpowering heat and scorching sun reduced it at once to a brown, unsightly mass, very painful to behold by one having the least taste for these beautiful gems. These facts should be taken into consideration in forming a true estimate of the character of the exhibition which has just closed.

Let us begin with the vegetables. On no former occasion has there been exhibited a greater variety than on the present. Every thing which is usually to be found in our markets at this season of the year was to be seen here, and some things which are not usually found in our markets. As respects quality, very emphatic language may be used. Notwithstanding the unfavorable season, the greater part of the vegetables were of superior excellence, showing some very considerable improvement, in size and quality, on preceding exhibitions; and it may be added, that in these respects nothing finer has ever been seen in New-York. It is not necessary, perhaps, to go into farther detail here, as some tolerable idea of the qualities of the various kinds of vegetables can be gathered from the list appended to this report.

Of agricultural productions the display was very satisfactory. Agriculture is second in importance to no subject which can occupy the attention of mankind. In all ages of the world man's chief reliance for subsistence has been on the produce of the soil. Hence the importance of making agriculture a subject of profound study, and ascertaining with precision the nature and operation of those natural and chemical laws which may be applied to its development and improvement. Aside from the introduction of drill husbandry and improved implements, agriculture remains practically pretty much where it was some two thousand years ago.

Notwithstanding we have many good farmers among us, the subject is not thoroughly understood, and never will be till it is made a part of our common school education. In the time of Virgil, it was made a subject of complaint that agriculture was the *only* art which was not made a branch of education, and it has remained a standing re-

proach to the present day. How long it will continue to be so, Heaven only knows. One would think the subject was of sufficient importance to demand the profound attention of the best talent in the world, for only let a failure of a principal crop occur in a densely peopled country, and it is followed by scenes of misery, the contemplation of which makes the very heart turn sick; and instances of this are so recent as to be within the memory of all. It is these very scenes of human deprivation which have given renewed interest to our staple product, Indian corn, the most useful and nutritious of the cereals. But the limits of this report will not admit of details, or of an enumeration of the samples and qualities of the various agricultural products exhibited on this occasion; suffice it to say, that there were fine specimens of corn, oats, wheat, flour, and similar articles, and also a preparation of wheat, very handsomely got up, said to be of considerable utility, and which excited a good deal of attention.

Here, too, something must be said of dairy productions, the display of which was exceedingly *large*, in one sense at least, which will be readily understood when it is stated that there was one cheese of *six hundred and twenty* pounds weight, another of *thirteen hundred* pounds, and still another of *fifteen hundred* pounds! The great labor and difficulty of preparing, curing, and pressing cheeses of such mammoth size may lead some to the conclusion that they must of consequence have been of very inferior quality; but such was not the fact; on the contrary, they were unusually good. These cheeses were made in Ashtabula county, Ohio; the largest one was of superior flavor, and equal to any thing in the fair; a convincing proof that its manufacture must have been conducted with the nicest care at every step of the process. In addition to these monster cheeses, there were others of superior excellence, such as American dairy, pineapple, imitation English, &c.; in short, they surpassed in quality any thing which has ever been seen at preceding fairs of the American Institute.

The dairy was further represented by several samples of butter of great excellence, showing a decided improvement in quality, as compared with former exhibitions. Some of the samples were of exquisite flavor, and pronounced to be equal to the best ever made. Butter is an article of such general consumption, that it has got to be regarded as one of the necessaries of life, and therefore, every process

which tends to improve and cheapen its production should be liberally rewarded. There were also some fine samples of imitation English lard put up in bladders, which were the occasion of an infinity of questions as to what they might be. Many received rather "greasy" answers for their inquisitiveness, with which they seemed quite satisfied.

It is impossible to enumerate everything exhibited, and the undersigned therefore pass over some fine samples of honey, hops, and other productions, including a great variety of pickles and preserves very elegantly got up, and several jars of superb pickled oysters, which were neatly got "down"—a few at least by the judges.

Let us now take a glance at the flowers, those glorious gems of a bountiful nature, and see how they will compare with former displays. It was greatly feared that there would be an entire failure here, owing to the causes above stated; but the rains early in October, though long delayed, came providentially in time to spare us the mortification of such a result. It must be admitted that there were not as many dahlias as on some former occasions, neither were they as large or as perfect in form; but this was not to be expected. The deficiency in this respect, however, may be considered as compensated in some measure by the richest display of roses ever beheld in New-York. The show of these was not only large, but embraced many of the choicest varieties under cultivation, among which were some of exquisite beauty, as respects both color and form.

The special exhibition of roses on Monday, the ninth, was a sight to delight the eyes of a connoisseur, and will not soon be forgotten by those who had the good fortune to see it. In addition to the above, there was a great variety of other choice flowers, including Pinks, Pansies, Passion flowers, Heliotropes, Salvias, Scabiosas, Italian Violets, Chrysanthemums, and other pretty things. There were also a number of plants in pots, such as Oranges and Lemons in fruit and flower, a very large and beautiful Cactus, a superb *Campanula pyramidalis*, and others; and likewise several stands of handsome rustic work, decorated with plants in pots, birds, and a globe of gold fish. Here, too, must be noticed a splendid ornamental design of cut flowers in form of a temple, in good taste and very striking in appearance. Attention will next be directed to a magnificent display of bouquets, which did not fail to rivet the attention of every beholder. These

bouquets were composed of the choicest flowers, made up with great good taste, frequently renewed during the fair, and placed at the feet of Flora as a fit offering to the goddess of flowers; as were also several baskets of splendid roses tastefully arranged, the whole forming a rare and beautiful sight. A variety of other floral attractions must be passed over, but mention must be made of a couple of baskets of wild flowers, real "natives" of our woods and fields, which were arranged with considerable taste, and did not appear to disadvantage in the select company in which they were found. Altogether, the display of flowers was very creditable, and, indeed, much better than was anticipated. A failure here would have been greatly to be deplored, for the fair would thus have been deprived of some of its greatest attractions. A display of flowers has peculiar charms for the ladies, perhaps because there are so many points of resemblance between them, both being alike the emblems of purity and the objects of love, and both exercising a humanizing and soothing influence, without which the world would be far less beautiful than it is. It is the grateful presence of the ladies which gives to our fairs such peculiar charms of attraction, and without their cheering presence we should certainly lose more than half our visitors, for it may be safely said that it is owing to their influence that we are indebted for a very large proportion of the other sex who visit our fairs. In all the great movements of the age, woman has exercised a more or less commanding influence within her legitimate sphere, and it is very proper that it should be so. Let her be made to feel an interest in any great undertaking coming within the sphere of her action, and she speedily imparts a kindred feeling to the other sex, and the work goes bravely on. To this same influence the American Institute is in no small measure indebted for the success which has hitherto attended its efforts, or at least for the means of making those efforts available for the public good. For the presence of the ladies we are greatly indebted to the flowers, and so we say, Heaven preserve the ladies and the flowers!

The display of fruit next demands attention; but the field here is so vast that nothing more than a brief outline view can be attempted, and reference must be made to the list accompanying this report. Aside from the fruit brought from the Pomological convention near the close of the fair, the undersigned venture to affirm, that at no former fair of the American Institute was there ever seen such a splendid variety as was exhibited on the present occasion. In one respect it

must be admitted that there was a falling off: the display of native grapes was inferior, in quantity at least, to what has been seen on several occasions before; but in regard to quality, the remark will not hold so good, for some specimens were of great excellence. Of foreign grapes the number was unusually large, and of very superior quality. The display of pears far exceeded any thing of the kind ever seen here before. The number of varieties was very large, including all the choicest kinds in cultivation, and among them many of luscious appearance, which was far from being deceptive. This choice fruit is receiving increased attention, and deservedly so; but we are still far behind many of our sister states in the cultivation of this and some other superior fruits. One would suppose that the juicy, melting pulp and delicious flavor of the Beurré and other choice pears would recommend them to general favor, and assuredly will when they become better known among us. Of apples there was also a large display, among them many choice varieties, including some of mammoth size; and also some fine seedlings, and some said to be seedlings which were not. Peaches, plums, nectarines, and other dainties must be passed over with a mere mention of their name. When the fruit from the Pomological convention was brought in, which, however, did not embrace half that was seen there, the sight presented was exceedingly grand.

In this connection, a brief allusion to the Pomological convention will not, perhaps, be considered out of place. This proved to be much larger than was anticipated, though it was known that considerable interest had been manifested in regard to it in various sections of the country. The objects for which it was got up were such as to recommend them to the attention of the public generally, and it was thought would be especially appreciated by fruit growers and amateurs in every part of the country; and the event proved this to be true. The interest felt in this subject was deep and wide spread, and delegates and others came from the most distant parts of the Union, bringing with them specimens of the choicest varieties of fruit grown in their neighborhood, and the result was the most magnificent display of fruit that eye ever beheld, and of which mere words are totally inadequate to give any proper conception. The proceedings of the convention were characterized by a commendable spirit of harmony and good feeling, and each member seemed more than satisfied with the addition made to his knowledge of fruits and the culture.

Already has the convention done much good; but details can not be entered into here, and the undersigned will therefore briefly state, that after a spirited session of three days, during which much important business was transacted, the convention appointed various committees of correspondence for the different States, and closed its labors with a resolution, "That the American Congress of fruit growers adjourn to meet in the city of New-York on the first Tuesday in October, in the year of our Lord 1849." This congress promises to be of great benefit to the fruit-growing interest of our country, and its first meeting will form an important epoch in the annals of the American Institute. It was, indeed, a grand affair, such as has never before been seen in New-York, and created a degree of enthusiasm scarcely to be credited; indeed, it is said that the chairman of the committee of arrangements was so far carried away by this feeling, that he inscribed over the door of the room, "*Hæc cæli porta est!*" Be this as it may, the first man has not yet been found who had formed any adequate conception of the rich, varied, and magnificent display which greeted the eyes of the delighted and surprised members of the American Congress of fruit growers.

It is deemed proper to annex here the names of the committees of judges.

General committee on Horticultural Productions.—Thomas Bridgeman, Peter B. Mead, and W. S. Carpenter.

On Flowers (special committee.)—N. J. Becar, Edward Doughty, and Robert Carnley.

On Fruits.—William W. Valk, Samuel B. Parsons, and Robert B. Parsons.

On Vegetables.—Edward Eastman, Joseph Riddock, and Hugh Orr.

On Agricultural Productions.—Peter H. Brink, Nicholas Wyckoff, and Samuel Allen.

On Flour and Meal.—Stephen Valentine, W. H. Powell, Henry Rowland, and William B. Humbert.

On Butter.—T. U. Sutton, Peter Coutant, and William S. Badeau.

On Cheese.—J. K. Weeks, J. M. R. Young, C. M. Carpenter, and Abraham Legget.

On Hops.—J. W. Rikeman, G. Kitching, and Ira Brown.

On Miscellaneous Articles.—T. Bridgeman, W. S. Carpenter, and J. H. Badeau.

As lists of premiums have appeared in some of the public prints, which are far from being accurate, and calculated to cause dissatisfaction among the successful competitors, if not injure the Institute, the premium lists of the horticultural department, which have been carefully revised and compared with the judges' reports, are appended here in a correct form.

FLOWERS.

J. M. Thorburn & Co., No. 15 John street. For a large display of dahlias, frequently renewed. A silver cup. For twenty-four choice varieties, exhibited October the 9th. A silver medal.

Matheo Donadi, Forty-fourth street, Bloomingdale Road. For a superb display of dahlias, frequently replenished. A silver medal. For twenty-four good varieties, exhibited October the 9th. The American Flora. For twenty fine varieties of Roses. Parson's Rose Manual. For several varieties of choice Cut Flowers. Downing's Horticulturist.

Charles Moore, Ninety-eighth street, Third Avenue. For a fine display of dahlias, frequently renewed. Boudoir Botany. For a fine assortment of roses and cut flowers. The American Flora. For a ladies' bouquet of fine flowers. Prince's Rose Manual. For twenty splendid varieties of roses, exhibited October the 9th. A silver medal.

Lewis Provost, Astoria, L. I. For a display of fine dahlias, frequently renewed. Downing's Horticulturist. For twelve new seedling dahlias, exhibited October the 9th. A silver medal.

Thomas Dunlap, 635 Broadway. For several varieties of choice dahlias. Hovey's Magazine of Horticulture. For twenty-four excellent varieties of dahlias, exhibited October the 9th. Browne's Trees of America.

Thomas Hogg & Son, Seventy-ninth street, near Third Avenue. For a good supply of dahlias. American Flower Garden Directory.

E. W. Fisk, Brooklyn, (Bernard Kelly, Gardener.) For a large supply of dahlias. Mrs. Loudon's Ladies' Flower Garden. For a splendid ornamental design of cut flowers. A silver medal. For a large supply of roses and other flowers. Parson's Rose Manual. For upward of twenty splendid bouquets. A silver medal. For a basket of roses, tastefully arranged. The American Flora.

Charles W. Zeiss, Newark, N. J. For a good supply of dahlias and other flowers. Bridgeman's Young Gardener's Assistant. For fruit-bearing orange tree. Trans. Am. Inst.

Mayer & Co., 37 John street. For an ornamental design of rustic work. Hovey's Magazine of Horticulture,

S. Pettit, 39 Hick street, Brooklyn. For a well-grown Cactus. Trans. Am. Inst.

²² Mrs. Joshua Jones, Hurl Gate, N. Y. For a fine plant of the Campanula pyramidalis. Mrs. Loudon's Ladies' Flower Garden.

Isaac Buchanan, Seventeenth street, near Fifth Avenue. For fine specimens of roses and other flowers. Parson's Rose Manual. For twenty choice varieties of roses, exhibited October the 9th. Browne's Trees of America.

Alexander Love, Jersey City. For a supply of roses and cut flowers. Prince's Manual of Roses. For a basket of flowers, renewed. Trans. Am. Inst.

J. & P. Henderson, Harsimus, N. J. For three bouquets of choice flowers. Hovey's Magazine of Horticulture.

Mrs. A. A. Smith, Sidney Place, Brooklyn. For several beautiful bouquets. The American Flora. For a dish of flowers, frequently renewed. Prince's Manual of Roses.

Andrew Reid, 163 Eleventh street. For two bouquets of choice flowers. American Flower Garden Directory.

Alfred Bridgeman, 878 Broadway. For a basket of choice roses, tastefully arranged and frequently renewed. Downing's Landscape Gardening. For several splendid varieties of dahlias. Trans. Am. Inst.

H. W. Tibbets, White Plains, N. Y. For the best basket of wild flowers. American Flower Garden Directory.

J. W. Wood, Bloomingdale, N. Y. For a basket of wild flowers, tastefully arranged. Bridgeman's Florist's Guide.

H. T. Ford, Middlesex county, N. J. For a large lemon tree, in fruit and blossom. Trans. Am. Inst.

F. Turner, Staten Island. For several varieties of flowers. Trans. Am. Inst.

Daniel Boll, Fiftieth street, Bloomingdale Road. For twenty fine specimens of roses in varieties. Downing's Landscape Gardening.

Among the roses and dahlias on exhibition, the following choice varieties produced the most perfect blooms.

Bourbon Roses. Cardinal Fiesch, Desgaches, Docteur Roques, Dupetit Thouars, Hermosa, Madame Duprez, Phoenix, Theresita, Proserpine, Souvenir de la Malmaison, Leveson Gower.

Bengal or China Roses. Agrippina, Archduke Charles, Clara Sylvain, Lady Warrender, Purple Crown, Queen of Lombardy.

Noisette Roses. Chromatella or Cloth of Gold, Euphrosyne, Lamarque, Solfaterre, Ophir d'Or, Vitilene, Yellow Smithii.

Hybrid Perpetual Roses. Baronne Prevost, Duchess of Sutherland, La Reine, Marquesse Bocella, Prince Albert, Queen Victoria.

Tea Roses. Archduchess Theresa, Isabella, Bougere, Eugene de Gaches, Fragoletta, Goubault, La Sylphide, Triomphe du Luxembourg, Victoria Modeste.

Dahlias. Athlete, Admiral Stopford, Andromeda, Baron Prevost, Beauty of Sussex, Bragg's Star, Black Prince, Cinderella, Captain Warner, Duchess de Nemours, Essex Champion, Isis, Lady of the Lake, Madame Dresser, Madame Zahler, Mrs. Edwards, Princess Radziwil, Queen of England, Roi de Pontille, Standard of Perfection, Striata, Viscount Ressequier.

FRUITS.

Messrs. Mackintosh & Co. Cleaveland, Ohio. Apples, 51 varieties, viz: Jonathan, Yellow Newton Pippin, Rhode Island Greening, Swaar, Norfolk Beaufin, Green Newtown Pippin, Pumpkin Sweet, Danvers Winter Sweet, Porter, Baldwin, Summer Pearmain, Hubbardston Nonesuch, Autumn Strawberry, William's Early Red, Gravenstein, Belmont, Roxbury Russet, Rambour Franc, Pound Sweeting, Menagere, Fall Pippin, Maiden's Blush, Ribston Pippin, Baltimore, Magnum Bonum, Pomme Royale, Yellow Bellflower, Flushing Spitzenberg, Red Calville, Canada Reinette, English Nopareil, Fall Wine Apple, Pomme de Neige, Stroat, White Margil, English Russet, Ross's Nonpareil, Cheeseborough Russet, Nonesuch, Beauty of the West, Columbia Russet, Green Codlin, Lady Apple, Hawthornden, Black Gilliflower, Winter Wine Apple, and three varieties not named. Pears, 41 varieties, viz: Fondante de Bois, Martin Sec, Beurré Diel, Striped Dean, Bezi Vaet, Hacon's Incomparable, White Doyenné, Beurré d'Aremberg, Frédéric de Wurtemburgh, Heathcot, Easter Beurré, Autumn Colmar, Sieulle, Knight's Monarch, Urbaniste, Old St. Germain, Wilkinson, Old Pound, Marie Louise, Newton Virgou-

leuse, Lewis, Compte de Lamy, Flemish Beauty, Seckel on Apple stock, Seckel on Pear stock, Prince's St. Germain, Belle de Naples, Rushmore's Bronchrétein, Fortune, Napoleon, Glout Morceau, New England Pound, Beurré de Capiaumont, Foster, Duchesse d' Angoulême, Louise Bonne de Jersey, Gray Doyenné, Ambrette, Sucré Vert, King's Bonchrétien, and two varieties not named. Quinces. 3 varieties, viz: Orange, Portugal, and Pear-shaped. Medlars. Dutch.

This being the choicest and greatest variety of fruit, it was entitled to the Silver Cup offered, which was accordingly awarded.

Marcus L. Ward, Newark, N. J. Apples, 17 varieties, viz: Vandyne, Michael Henry, King Apple, Queen Apple, Lady Apple, Orange, Graniwinkle, Newtown Pippin, Russet, Ladies' Blush, and seven other varieties. Premium, Six Numbers of Hovey's Fruits of America. For two varieties of Native Grapes, Downing's Fruits and Fruit Trees of America.

W. Watson, West Farms, N. Y., (James Angus, gardener). For 12 varieties of Apples, Downing's Horticulturist. For seventeen extra fine Quinces, Kenrick's American Orchardist.

Abijah Harrison, Orange, N. J. Apples, 9 varieties, viz: Harrison, Jersey Pie Apple, Graniwinkle, Vandyne, and five seedlings without names. Premium, Bridegman's Young Gardener's Assistant.

Michael Rowe, Newark N. J. For three varieties of Apples, Trans. N. Y. State Ag. Society.

W. S. Carpenter, 468 Pearl Street, for the best twelve Winter Apples. Prince's Treatise on Fruits.

R. T. Underhill, Croton Point, N. Y., for three choice varieties of Native grapes. A silver medal. For one dozen extra large quinces, Prince's Treatise on Fruits.

Matthew Antonides, Brooklyn, L. I., for fine specimens of Isabella grapes, Hoare's Treatise on the Vine.

John M. E. Valk, Flushing, L. I., grapes, 10 varieties, viz: Grizzly Frontignac, Muscat of Alexandria, Black Morocco, Frankenthal, Royal Muscadine, Black Lombardy, White Frontignac, Red Chasselas, Petit Chasselas Hatif, and Black Hamburgh. Premium, silver medal.

N. Durphy, Fall River, Mass., grapes, 6 varieties, viz: White Frontignac, Black Hamburgh, Black St. Peter's, White Nice, White Sweet Water, and Royal Muscadine. Premium, Four Nos. of Hovey's Fruits of America.

Roswell L. Colt, Paterson, N. J. (James Scanlin, fruit gardener,) for grapes in varieties, viz: Cambridge Botanic Garden, White Chasselas, Chasselas de Fontainebleau, Victoria Hamburg, Black Damascus, Dutch Hamburg, Black Hamburg, West's St. Peter's, Muscat of Alexandria, Muscadel, Muscat Lund, Black Cluster, and three varieties not named. Bridgeman's Young Gardener's Assistant.

J. E. Edwards, Stonington, Conn., for grapes, three varieties, viz: Royal Muscadine, Black Hamburg, and Black Muscadine. Kenrick's American Orchardist.

E. Simmons, Worcester, Mass., for one dozen fine nectarines. Trans. Am. Inst.

Samuel Walker, Roxbury, Mass., pears, sixty varieties, viz: Belle et Bonne de Hee, Hacon's Incomparable, Beurré Rance, Beurré d'Aremberg, Beurré Diel, Golden Beurré of Bilbao, Beurré Duval, Bezi Vaet, Louise Bonne de Jersey, Fondante Van Mons, Crassanne, Bergamotte, Figue de Naples, Epine Dumas, Beurré de Capiamont, Van Mons Leon le Clerc, Dix, Quillitette, Monarch, Fondante d'Automne, Marie Louise, Chaptac, Columbia, Compte de Lamy, Messire Jean, Verte Longue d'Automne, Délices de Jodoigne, Queen of the Low Countries, Ne Plus Meuris, Catillac, Gendesheim, Anglêterre, Champagne, St. Germain, McLaughlin, Fourcroy, Glout Morceau, Gray Doyenné, Beurré d'Anjou, Pacquency, Chaumontelle, Crassanne (Winter), Vicar of Winkfield, Saint Mesmire, Winter Nelis, Angora, Williams' Bonchrétien, Urbaniste, Verte Longue, Duchess d'Angoulême, Seckel, two seedlings, and six varieties, names not known. Premium, six numbers of Hovey's Fruits of America.

Hovey & Co., Boston, Mass., pears, thirty-seven varieties, viz: Easter Beurré, Beurré Diel, Beurré d'Aremberg, Beurré Anjou, Brown Beurré, Belle Heloise, Bergamotte Partlenay, Bergamotte de Bruxelles, Bergamotte Candette, Belle et Bonne de Hee, Spanish Bonchrétien, Bonchrétien Fondante, Forelle, Belle d'Esquermes, Belmont, Colmar d'Aremberg, Compte de Lamy, Chaumontelle, Capiamont, Doyenné Santelête, Duchesse d'Angoulême, Figue de Naples, Flemish Beauty, Glout Morceau, Inconnue Van Mons, Louise Bonne de Jersey, Las Casas, Léon le Clerc, Verte Longue d'Automne, Knight's Monarch, Madotte, Napoleon, Le Curé, Passé Colmar, Styrian, Swan's Egg, Viscompte de Shoebech. Premium, Downing's Fruits and Fruit Trees of America.

W. J. Wilcomb, Flushing, L. I., pears, five varieties, viz: Colum-

bia, Vicar of Winkfield, Easter Beurré, Winter Nelis, and Lawrence. Premium, Bridgeman's Young Gardener's Assistant.

C. H. Raberg, Paterson, N. J., for one dozen fine Duchesse d'Angoulême pears. Kenrick's American Orchardist.

T. B. Jackson, Newtown, L. I., for twelve extra large Winter pears. Prince's Treatise on Fruits.

S. T. Jones, Brighton, S. I., for several varieties of quinces. Bridgeman's Gardener's Assistant.

Noah T. Clark, Cornwall, N. Y., apples, three varieties, viz: Rhode Island Greening, Surprise, and Fall Pippin; a basket of fine Apple quinces. Premium, The Farmer's Library.

Ellwanger, Barry & Rowe, Hope Nursery, Rochester, N. Y., twenty varieties of apples, viz: Esopus Spitzenberg, Northern Spy, Winter Pearmain, Melon, Peck's Pleasant, Holland Pippin, Swaar, Vandervere, Westfield Seek-no-further, Black Detroit, Rhode Island Greening, Fall Pippin, Poughkeepsie Russett, Yellow Bellflower, Twenty ounce Apple, Roxbury Russett, Talmon Sweeting, Crow's Egg Sweeting, Autumn Sweeting, and Jack Apple. Premium, four numbers of Hovey's Fruits of America.

Thompson C. Munn, Orange, N. J., for three varieties of apples, viz: Vandyne, Bellflower, and King Apple. Kenrick's American Orchardist.

Charles Berrian, Fordham, N. Y., for forty Monstrous Pippin apples, average weight 18 ounces. Trans. Am. Inst.

J. W. Vanpelt, Brooklyn, for one dozen Mammoth Pippin apples, average weight twenty ounces. Trans. Am. Inst.

B. & G. Haviland, Greene county, N. Y., for fine varieties of apples. Trans. N. Y. State Ag. Soc.

Samuel Carhart, Raritan, N. J., for a case of beautiful seedling apples. Trans. N. Y. State Ag. Soc.

C. T. Smith, Nyack, Rockland county, for three esteemed varieties of apples, Trans. N. Y. State Ag. Soc.

H. W. Tibbetts, White Plains, N. Y., for five choice varieties of apples. Downing's Fruits and Fruit Trees of America.

A. Coe, Newark, N. J., for two varieties of apples, one of peaches, and one of pears. Bridgeman's Young Gardener's Assistant.

Theodore L. Provost, Greenville, Greene county, grapes, five varieties, viz: Catawba, Isabella, Sweetwater, Muscadine, and Miller's Burgundy. Premium, Trans. N. Y. State Ag. Soc.

E. W. Fisk, Brooklyn, Bernard Kelly, gardener, for good grapes, pears, and quinces. Downing's Fruits and Fruit Trees of America.

Lewis Provost, Astoria, L. I., for six varieties of pears. Bridgeman's Young Gardener's Assistant.

J. W. Obert, Rocky Hill, N. J., for forty fine Freestone peaches. Hovey's Magazine of Horticulture.

W. H. Hendrickson, Middletown, N. J., for fine specimens of late peaches. Trans. Am. Inst.

John P. Haff, Bloomingdale, for three varieties of seedling peaches. Trans. Am. Inst.

Leonard B. Kipp, Mount Pleasant, N. Y., for two bushels of extra Pippin apples. Trans. of the Am. Inst.

J. P. Dickey, Gerrysville, Livingston co. N. Y., for fine specimens of Twenty-ounce apple or Cayuga Red Streak. Transactions of the American Institute.

Andrew Course, Fordham, N. Y., for two choice varieties of apples and one of pears. Transactions of the American Institute.

Several other lots of fine fruit were entered on the books at Castle Garden, but as some of these were sent thence to the Pomological Convention at Clinton Hall, and other parcels were delivered late, they could not be examined by the judges; they are, however, entitled to notice.

Ira Harrison, Orange, N. J., fine specimens of apples in three varieties, viz: Rhode Island Greening, Harrison and Canfield.

Thomas Hogg & Son, Seventy-ninth-street, near Third Avenue; Apples: Moncrief Pippin, Combermere Abbey apple (new). Pears, Buerré Diel, Bezi de Veterants, Chinese Sand pear, Doyenné Sieul, Duc de Bordeaux, Duchesse d'Angoulême, Flemish Bonchrétien.

Robert Donaldson, Blithewood, Dutchess co., N. Y., one large cluster of flame colored Tokay grapes, and two other foreign varieties raised, by George Kidd, gardener, without artificial heat.

Charles Pearson, Newark, N. J., Specimens of seedling pears, named "Rough and Ready," and a good variety of apples.

Edward Classon, 219 Delancy-street, three varieties of grapes, viz: Catawba, Isabella and Sweet Water.

G. W. Freeman, Orange, N. J., two fine varieties of apples.

R. L. Livingston, Barrytown, Dutchess county, N. Y., splendid specimens of Newtown Pippin apples.

C. Parkhurst, Newark, N. J., fine specimens of apples and late clingstone peaches.

R. L. Pell, Pelham, Ulster county, a box of excellent Newtown Pippin apples.

Wilbur Marten, 194 Allen-street, specimens of bell pears, average weight one pound and a half each.

Alfred Taylor, Brooklyn, specimens of quinces, 24 ounces each.

Apples entered as seedlings from the following persons: Robert Washbon, Rensselaerville, Albany county; Henry Migcon, Litchfield, Conn.; David Whipple, Greenwich, Washington county; N. J.

Grapes, fine specimens of Isabella and Catawba, from Henry Young, Brooklyn.

Peaches, fine specimens of Melocotones, from William Hendrickson, Centerville, N. J.

Quinces, (very fine) from H. E. Ketchum, Harsimus, and from J. J. Scofield, Morristown, N. J.

ESCULENT VEGETABLES.

E. W. Fisk, Brooklyn, (Bernard Kelly, gardener,) for the choicest assortment of culinary vegetables. A silver cup.

Roswell L. Colt, Paterson, N. J., (Nicholas Friche, gardener,) for the best and greatest variety of vegetable roots for Cattle. A silver cup. For the best twelve roots of white solid celery. Trans. of the N. Y. State Ag. Soc.

E. H. Kimball, Flatlands, L. I., (Patrick Condon, gardener); for the best twelve long blood beets, Bridgeman's Young Gardeners' Assistant; for the best six heads of Cape Brocoli, Bridgeman's Young Gardeners' Assistant; for the best six heads of drumhead cabbage Trans. of the N. Y. State Ag. Soc.; for the best six heads of Savoy cabbage, Trans. of the Am. Inst.; for the best peck of yellow onions, New-York Farmer and Mechanic; for the best twelve parsnips for cattle, Trans. of the N. Y. State Ag. Soc.; for a peck of extra large red-top turnips, a volume of the Cultivator.

Charles Williams, Harsimus, N. J., for the best twelve turnip-rooted blood beets. American Agriculturist.

J. C. Thompson, Tompkinsville, S. I., for the best twelve sugar beets. New-York Farmer and Mechanic.

W. H. Hendrickson, Middletown, N. J., for the best twelve Mangel Wurtzel beets. American Agriculturist.

R. R. & J. R. Bennett, Fort Hamilton, L. I., for the best six heads of cauliflower. American Agriculturist.

J. & P. Henderson, Harsimus, N. J., for the best twelve carrots for the table. N. Y. Farmer and Mechanic.

William Watson, West Farms, (James Agnus, gardener,) for the best twelve carrots for cattle, American Agriculturist; for the best peck of red onions, American Agriculturist; for several varieties of fine potatoes, Trans. of the Am. Inst.

W. C. White, Bloomingdale, for twelve roots of fine white solid celery. Trans. of the Am. Inst.

R. K. Delafield, Staten Island (William Reed, gardener). For the best six egg plants. A volume of the cultivator.

J. E. Body, Staten Island (J. White, gardener). For the best peck of white onions. Bridgeman's Young Gardner's Assistant. For the best twelve parsnips for the table. Transactions of the American Institute. For the best peck of potatoes for cattle. A volume of the Cultivator.

John Briell, Harsimus, N. J., for the best peck of seedling potatoes. The Farmer's Library.

James Wheeden, Newtown, L. I., for the best peck of table potatoes. The Monthly Journal of Agriculture.

Mrs. Joshua Jones, Hurl Gate, for a peck of excellent potatoes. Bridgeman's Young Gardener's Assistant. For five varieties of culinary vegetables. Transactions of the New-York State Agricultural Society.

David Johnson, Flatbush, L. I., for three choice varieties of potatoes. Transactions of the New-York State Agricultural Society.

Garret G. Bergen, Brooklyn, for the best three cheese pumpkins. New-York Farmer and Mechanic.

M. R. McGarrity, West Hoboken, N. J., for the best three cattle pumpkins. Bridgeman's Young Gardner's Assistant.

Robert Selkirk, Bethlehem, Albany county, for the best and largest pumpkin, (weight about 200 pounds). American Agriculturist.

John Upton, Twenty-first street, near Eighth Avenue, for the best twelve roots of salsify. Transactions of the American Institute.

J. W. & S. Halden, Bloomingdale, for the best three crook-neck squashes. American Agriculturist. For the best half peck of tomatoes. Transactions of the American Institute. For the best peck of white flat turnips. Bridgeman's Young Gardner's Assistant.

G. G. Griffin, Bloomingdale, for the best and largest squash. A volume of the Cultivator.

S. T. Jones, New Brighton, S. I. (James McKenna, farmer), for the best peck of yellow turnips. *New-York Farmer and Mechanic*:

Walter F. Williams, Junr. Bull's Ferry, for the best peck of Russia turnips. A volume of the *Cultivator*. For two choice Valparaiso squashes. *Transactions of the American Institute*.

Joseph Clowes, Harsimus, N. J., for three choice varieties of culinary vegetable. *Transactions of the New-York State Agricultural Society*.

George Weatherspoon, New Brighton, S. I., for three fine varieties of culinary vegetables. *Transactions of the American Institute*.

G. Thompson, Camden county, N. J., for a basket of extra fine capsicums or peppers. *Transactions of the American Institute*.

D. C. Van Winkle, Coxsackie, Greene county. For fine specimens of beets and egg plants. *Transactions of the American Institute*.

Other contributors to this department:

Extra fine cape broccoli, from R. B. & J. R. Bennet, Fort Hamilton, sent in too late to be placed in competition with that of early exhibitors. Extra large turnips and beets raised on land manured with prepared Guano, from S. F. Halsey, Fifty-first street, Third Avenue. Excellent blood beets, from T. Burroughs, Newtown. Fine carrots and salsify, from James Mathewson, New Utrecht, L. I. Three large cheese pumkins, from Samuel Carhart, Raritan, N. J. Fine egg plants, from Henry Brand, Bergen county, N. J. Several varieties of choice culinary vegetables, from J. C. Thompson, Tompkinsville, S. I.

AGRICULTURAL PRODUCTIONS.

Roswell L. Colt, Paterson, N. J., for the best varieties of Indian corn. A silver medal. For the best bushel of buckwheat. *Colman's European Agriculture*.

J. E. Body, Staten Island, (John White, farmer), for the best 40 ears of white corn. *Colman's European Agriculture*.

W. Watson, West Farms, (J. Angus, farmer), for the best 40 ears of yellow corn. *Washington's Agricultural Correspondence*.

D. Johnson, Flatbush, L. I., for four choice varieties of Indian corn. *Washington's Letters on Agriculture*.

E. H. Kimball, Flatlands, L. I., for the best bushel of wheat. A silver cup.

Henry Robinson, Newburgh, N. Y., for a bushel of superior wheat, Washington's Agricultural Correspondence.

James Wheeden, Newtown, L. I., for a bushel of good buckwheat. Washington's Agricultural Correspondence.

George Nesbitt, Hobart, Delaware county, N. Y., (Alexander Smith, agent), for the best bushel of oats. A silver medal. For three bushels of superior seed peas. Transactions of the American Institute.

Patrick Flood, Castleton, S. I., for a bushel of superior oats. Washington's Agricultural Correspondence.

FLOUR AND MEAL.

Hecker & Brothers, Croton Mills, N. Y., for a barrel of super-excellent flour from Genesee wheat. A silver medal. For a barrel of choice superfine baker's flour. Colman's European Agriculture. For a barrel of good Graham flour. A silver medal. For fine samples of grits, macaroni, and farina. A diploma.

J. K. Wing, Albany, (Herrick & Van Buskirk, 121 Broad street, Agents,) for a barrel of excellent superfine flour. Gardner's Farmer's Dictionary.

Samuel Warne, Mount Pleasant Mills, (E. Vasyckel & Co., 88 West street, Agents,) for a barrel of extra fine kiln-dried Indian meal. A silver medal.

Frank & Stewart, Warren county, N. J., (C. Stewart, Agent, 115 Fulton street,) for a barrel of kiln-dried Indian meal. Gardner's Farmer's Directory.

PRODUCTIONS OF THE DAIRY.

Butter.

Brewster Helms, Goshen, Orange co., N. Y., for twenty-five pounds of super-excellent butter. A silver cup.

John Holbert, Chemung, N. Y., for twenty-five pounds of delicious flavored butter. A silver medal.

N. Newkirk, Goshen, Orange co., N. Y., for twenty-five pounds of superb butter. The Farmer's Library.

M. L. Thompson, Goshen, Orange co., N. Y., for twenty-five pounds of fine family butter. Trans. Am. Inst.

Henry Robinson, Newburgh, N. Y., for a sample of good butter. Trans. Am. Inst.

Cheese.

J. Garabrant, No. 15 Front street, for a delicious American dairy cheese, from Herkimer county. A Silver cup.

P. W. Stebbins, No. 15 Front street, for a rich-flavored Herkimer cheese. Transactions N. Y. State Ag. Soc.

S. D. Morrison, Hudson, N. Y., for a choice imitation English cheese. A Silver medal.

James Smith, North Canaan, Mass, for a fine-flavored imitation English cheese. Washington's Agricultural Correspondence.

Hyslop & Coffin, 43 Front street, for extra fine pineapple cheese. Trans. N. Y. State Ag. Soc.

William Wilson, Herkimer, (Haight & Tooper, 216 Washington street, Agents,) for a box of fine pineapple cheese. Trans. N. Y. State Ag. Soc.

Stone & Mills, Morgan, Ashtabula county, Ohio, (Wallace, Wicks, & Co., No. 11 Front street, Agents,) for a super-excellent cheese, weight 1,500 pounds. A Silver cup.

H. Burrell & Co., 15 Front street, for an excellent cheese, weight 1,300 pounds. A Silver medal.

A. E. Austin, Morgan, Ashtabula county, Ohio (Wallace, Wickes, & Co., No 11 Front street, Agents,) for a cheese of superior quality, weight 620 pounds. A Silver medal.

MISCELLANEOUS ARTICLES.

D. Brown, Eaton, Madison county, for a bale of superior hops. A Silver medal.

E. Leland, Morrisville, Madison county, for a bale of fine hops. Trans. N. Y. State Ag. Soc.

Benjamin Haviland, No. 5 Orchard street, for good specimens of honey. A Diploma.

Remington & Co., 191 and 193 Chrystie street, for good specimens of pickled cucumbers and onions. A Diploma.

Isaac Reckhow, 142 Liberty street, for well-preserved peaches and limes, and also pickled oysters. A Diploma.

Before closing this Report, the undersigned would call attention to an evil which has caused no small annoyance, and which seems to be on the increase. Reference is here made to the practice of receiving articles of the most trifling value, which have no real importance whatever, and which would not excite the least attention

under ordinary circumstances, if, indeed, under any circumstances at all. The only object in bringing these insignificant trifles is to obtain a ticket of admission, which, on being returned at the close of the Fair, bears strong tokens of having done pretty good service. Why should these things be received at all? Is it designed to make the Fairs of the American Institute a mere toy shop? certainly not; but still, this will be the result if this evil is not speedily checked. The avowed object of the Institute is to encourage the production of articles of real intrinsic excellence, and only such; and this object should never for a moment be lost sight of. The principle should be, to receive nothing below the standard for which premiums are offered. So far as concerns the Horticultural Department, attempts have been made to check this evil, but they have not been sufficiently encouraged. Persons will bring a few ears of Corn, as many Apples or Pears, a Smyrna Squash of no value whatever, half a dozen overgrown Tomatoes, and other like articles, merely for the purpose of getting a ticket; and these same triflers are the very ones to make a terrible "Much-Ado-about-Nothing" at the close of the Fair, if their almost worthless articles are not forthcoming on the instant, whereas most of them, having become rotten, have been thrown away as nuisances. The whole tribe should be got rid of as speedily as possible. The dignity and interests of the Institute alike demand that this state of things should proceed no further; and it will be evident to any one who will take the trouble to look into the subject, that the reformation so loudly called for cannot be long delayed without the danger of impairing the usefulness and hazarding the fair fame of the Institute.

In conclusion, the undersigned again congratulate the friends of the American Institute on the auspicious close of its twenty-first Annual Fair, and add their sincere wish, that each succeeding exhibition may be an improvement upon that which has gone before. May the march of the Institute be ever onward in its path of usefulness, till at length, through its protecting care, American genius shall assume a proud place in the front rank of Science and Art.

All of which is respectfully submitted.

THOMAS BRIDGEMAN,
PETER B. MEAD,

Superintendents of the Horticultural Department.

New-York, November 7th, 1848.

REPORT OF THE FLOWER GARDEN COMMITTEE.

The Committee on Flower Gardens regret that they should have so few gardens to report upon ; but this will occasion but little surprise when we take into consideration the very unpropitious season just passed and also the late hour at which it was made publicly known that premiums would be offered for the best cultivated flower garden ; indeed, the first cause operated so strongly that all eventually declined becoming competitors, except two, Mr. Henry Steele, of Jersey City, and Mr. John A. Dayton, of Brooklyn. In regard to these two the committee experienced no difficulty in arriving at an opinion.

The garden of Mr. Steele is of small size, but laid out with much judgment and taste and contains a choice collection of plants. Mr. Steele has made the most of his somewhat limited plot of ground and has shown good judgment in growing none but pretty plants, and in making such a selection as to ensure a succession of bloom during the whole season. He has some fine Roses, Carnations, Phloxes, and other choice plants. Reserving particulars for another occasion, the committee can only here say that they were much gratified with their visit to Mr. Steele's garden ; and they cannot refrain from adding that it is infinitely to his credit that it is all cultivated by his own hand. In addition to the flowers, the committee observed some fine specimens of vegetables, and a small but very choice collection of fruit ; but these things do not come within their province.

Mr. Dayton's garden is on a much larger scale than Mr. Steele's, embracing a large collection of choice plants, some of them of rare beauty. The committee observed with pleasure that Mr. Dayton has introduced into his garden some fine specimens of the natives of our own woods and fields : a practice much to be commended, and which might be made to add immensely to the attractiveness and beauty of our flower gardens. His collection of Roses is large, embracing all the finest varieties under cultivation. The committee in short, observed a great many pretty things, such as Rhododendrons, a splendid collection of Carnations, Phloxes, Lilies, and others too numerous to mention on the present occasion, some of them very rare plants. Mr. Dayton's garden is not laid out with the studied design observable in Mr. Steele's, his plan being to plant in clumps and patches,

and it must be admitted that this plan in many cases admits of the display of much taste, and the effect produced is often highly pleasing. In Mr. Dayton's garden, also, the committee observed fine specimens of vegetables, and a considerable collection of choice fruit.

It is the opinion of the committee that Mr. Dayton is entitled to the first premium, and Mr. Steele to the second, and they accordingly award the *Silver Cup* to the former, and the *Silver Medal* to the latter.

Could it be known in early spring that premiums would be given for the best cultivated Flour Gardens, the committee have reason to believe that there would be no lack of competitors; and it is much to be hoped that some plan will be adopted to accomplish this object. Premiums of this kind are of the greatest utility; they not only awaken and encourage a laudable emulation to excel in the cultivation of flowers, but they also stimulate and spread more widely the taste for this most delightful of pastimes, if it be not something *more*. It is right and proper, while the American Institute gives due encouragement to Agriculture, that it should also foster and disseminate a taste for flowers, those beautiful gems, which, while they improve and elevate the mind, at the same time give renewed charms to the fond name of "home." If printing is "the art preservative of arts," Agriculture, in its largest sense, is the art preservative of man.

All of which is respectfully submitted.

PETER B. MEAD, *Chairman*.

New-York, Nov. 10, 1848.

REPORT OF THE COMMITTEE ON TESTING PLOWS AT WHITE PLAINS, OCT. 5, 1848.

There were two classes of plows presented for trial; of the first class, Miner and Horton's plow, presented by Capt. Robinson, of Newburgh, turning a furrow 16 inches wide, and 8 inches deep, with a draught of 600 lbs., the first premium was awarded. Mr. Mayher presented his plow, Eagle F, work and draught the same as the first, was awarded the second premium. These were the only two the committee had time to try.



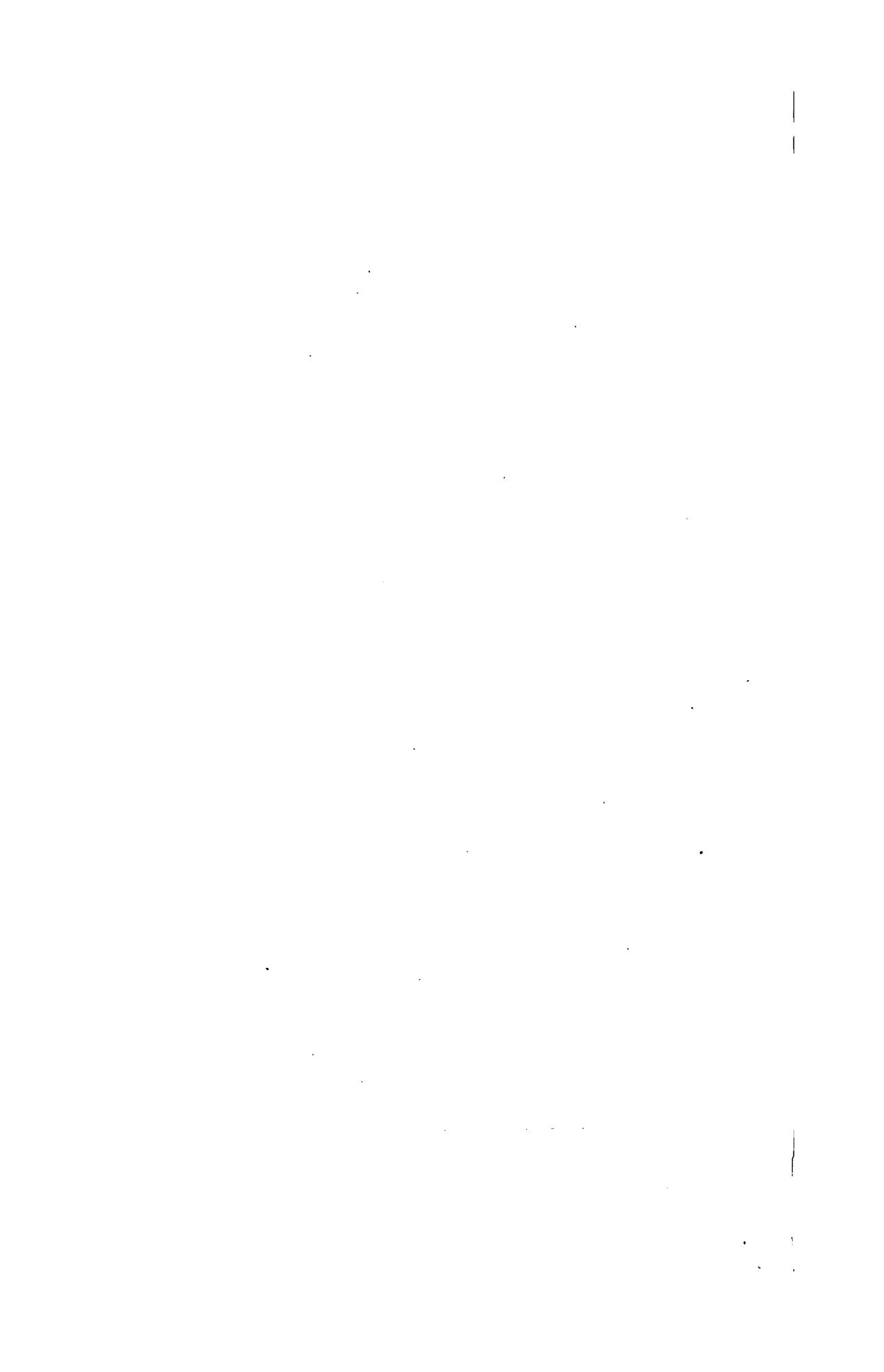
HAND AND HORSE CORN MILL,

One of Mayer & Co's list of impliments of their general exhibition—winning a prize.



MAYER & CO'S PLOW.

Used in (and won a premium at) the testing of Plows; more than 20 Plows competing.



Of the second class the Bergen Plow, No. 11, entered by Mr. Myer, of Newark, N. J., turning a furrow 12 inches wide and 6 inches deep, with a draught of 300 lbs., was awarded the first premium.

The plow of John Moore & Co., No. 19½, turning a furrow the same as the first with a draught of 308 pounds was awarded the second premium.

John Mayher & Co.'s plow done the same work as the first, with a draught of 350 pounds.

Myers' plow, No. 9½, done the same work as the first, with a draught of 400 lbs.

Owing to the shortness of the time the committee could not do justice to the competitors. They would therefore recommend that at the next annual fair, a day be set apart for the trial of plows exclusively, to commence at as early an hour as may be practicable, and the committee be allowed the whole day for the purpose.

All which is most respectfully submitted, by approval of the committee.

WILLIAM BIGELOW, *Chairman.*

New-York, October 6th, 1848.

REPORT OF THE COMMITTEE ON THE PLOWING MATCH AT WHITE PLAINS, OCT. 5, 1848.

The committee on plowing respectfully report:

That the following competitors offered their names for the premiums offered by the Institute:

Alfred F. Munn, Asa B. Munn, Henry Robinson, two plows; Matthew Ray, Thomas Horton and Samuel Hall, two plows; John Mayher, Rufus Ambler, and Ray Tompkins; and that they all performed the work assigned within one hour, the shortest time being 36 minutes, and the longest about 50 minutes.

Your committee awarded

Henry Robinson, Miner & Horton's plow, the first premium.

Asa B. Munn, Bergen Plow, the second premium.

Matthew Ray, Mayher Plow, the third premium.

The chairman of the committee deems it proper to state that on the question of the second premium, the vote stood, while on the ground, three for Matthew Ray, and two for Asa B. Munn, and that the chairman was instructed so to report, and that he accordingly made such announcement from the stage on the grounds of the Westchester County fair; and that subsequently two of the majority, Messrs. Edward B. Underhill, and Horace Baily, of Westchester county, sought the chairman at the hotel at White Plains, and stated that after having given in their vote they had reviewed the ground, and changed their judgment in favor of the plowing of Asa B. Munn. The chairman would further add, that in his judgment Alfred F. Munn was fairly entitled to the third premium, and would recommend him to the favorable consideration of the American Institute.

The chairman would also state, that after having attended to the duty especially assigned him, he assisted Mr. Bigelow and the others of the committee on the testing of the draught of plows, and was requested by Mr. Bigelow to state, that the time necessarily allotted for said purpose was entirely too short, and the ground totally unfit for the purpose, and to recommend that on a future occasion for testing the draught of plows, level ground should be selected more in the immediate vicinity of New-York, entirely free from stones, rocks, or other obstructions, save the mere soil and its coating of grass, and that a separate day (from the other plowing) should be had for such purpose.

All of which is respectfully submitted.

JOHN G. BERGEN,

In behalf of the committee.

New-York, October 5, 1848.

REPORT OF THE COMMITTEE ON THE SPADING MATCH AT
WHITE PLAINS, OCT. 5, 1848.

Your committee on spading would respectfully report:

That they attended the duties assigned them with great pleasure, and that five persons entered their names to contend for the premiums offered by the Institute. All performed the work assigned them in less than forty minutes, and in a superior manner.

Your committee awarded to

Joseph Mulley, the first premium, for the best spading.
William P. Lodge, second premium for the 2d best spading.
Joseph P. Lodge, third do do 3d do

Your committee would not fail to recommend to your consideration *John Fudden* and *John Barclay*, the other two persons who entered for competition, for the very handsome and speedy manner in which they performed their work, and only regret that they had not premiums sanctioned by the Institute to award to them also.

Your committee would take this occasion to respectfully suggest to tillers of the ground generally the great and paramount importance, in order to secure a successful crop, of *preparing well their ground*, and they take great pleasure in awarding these premiums, in hope that it may prove a stimulus to others engaged in agriculture to strive to excel in this most useful art to the husbandman of "*spading well*."

W. I. TOWNSEND,
A. S. PRIME,
J. AMES LOCKE,
JOHN BRILL,

Committee on spading.

New-York, Oct. 5, 1848.

REPORT OF THE JUDGES ON AGRICULTURAL IMPLEMENTS.

The judges appointed by the managers of the Twenty-First Annual Fair, to examine the Agricultural Machines and Implements exhibited, would respectfully report as follows :

Eddy & Co., Union Village, Washington county, N. Y., the best iron beam plow, well made, and adapted to general purposes.

Hall & Speer, Pittsburgh, Pa., the second best iron beam plow.

Eddy & Co., Union village, Washington county, N. Y., the best side hill plow.

George Page, Baltimore, Md., a plow of the most novel construction—the mould board *revolving*—an arrangement which, in our opinion, must make it the easiest working plow on exhibition. It did not arrive in time to be entered at the plowing match.

C. J. Burrall, Geneva, N. Y., a plow also of novel construction—having a *revolving* land side. It is well made, and in our opinion worthy of notice.

Ruggles, Nourse & Mason, Worcester, Mass., (J. B. Allen & Co. agents, New-York,) a centre draught plow, with a beautiful arrangement of clevis, and of good workmanship.

C. J. Burrall, Geneva, N. Y., the best cultivator.

The plows above named, are from a large assortment on exhibition; and though the committee have thought advisable to present them, they are aware of such a degree of incompetence to decide correctly of their respective merits, that you will, we hope, take its judgment with caution.

Hay and Straw Cutters,

Of which there is also a large variety on exhibition, and your committee have thought best to divide them according to the principle of their construction, into three classes :

1. Those having revolving cylinder knives, and cutting by compression ;
2. Those having revolving shear knives ;
3. Those having reciprocating shear knives.

Ruggles, Nourse & Mason, Worcester, Mass., (A. B. Allen & Co. agents, New-York,) the best revolving cylinder knife straw and stalk cutter; an improvement on those heretofore exhibited.

William Hovey, (Mayher & Co. agents, New-York,) the second best revolving cylinder knife straw and stalk cutter.

George Catchpole, Geneva, N. Y., (S. C. Hills & Co. agents, New-York,) the best revolving shear knife straw and stalk cutter.

C. J. Burrall, Geneva, N. Y., the second best revolving shear knife straw and stalk cutter.

B. Densmore, Brockport, N. Y., the best reciprocating shear knife straw and stalk cutter. It is constructed on a good principle, and in a workmanlike manner—is well adapted to all kinds of fodder, and is sold cheap.

Joseph C. Rich, Penfield, N. Y., (Moore & Co. agents, New-York,) the second best reciprocating shear knife straw and stalk cutter.

Jesse Urmy, Wilmington, Del., a hay, straw and corn stalk cutter. It took the first premium last year. It has now, in combination, a grinder for corn, oats, &c., and is commended for its combination.

John Roman, Marshalton, Chester county, Pa., a vibrating fodder cutter—peculiarly constructed—having circular knife and reciprocating bed, and is judged better for coarse than for fine fodder, and may be worth notice.

The machine that will, in the opinion of the committee, do the most work, with the same expenditure of power, *when in good order*, is Catchpole's.

Eddy & Co., Union Village, Washington county, N. Y., the best horse power.

Eddy & Co., Union Village, Washington county, N. Y., the best threshing machine.

Daniel Pease, (S. C. Hills & Co. agents, New-York,) a machine for cleaning buckwheat—new, never before exhibited. Specimens of grain shown, beautifully clean.

S. Wilkinson, South Middleton, Orange county, N. Y., three grain cradles, of excellent workmanship.

J. R. & R. Downer, Castleton, N. Y., a horse rake, of excellent workmanship.

Simon Ingersoll, Astoria, N. Y., the best seed sower.

John Hickey, Flatbush, L. I., the best fanning mill; peculiarly constructed,—is well recommended, and appears to be well adapted to most of the purposes designed.

Several other mills, of good workmanship, were exhibited, but of which the committee is unable to make any discrimination.

M. P. Coons, Lansingburgh, N. Y., (H. B. Dawson, agent, New-York,) three specimens of good fence,—*wood and iron combined*.

Israel Lamborn, Chester county, Pa., the best tubular bee hive.

William Vine, New-York, (A. B. Allen & Co. agents, New-York,) the best churn.

——— Crowell, (A. B. Allen & Co. agents, New-York,) the second best churn.

A. B. Allen & Co., New-York, a good specimen of iron garden chain, from the foundry of Jordan L. Mott, Mottville, N. Y.

David Perley, East Walpole, Mass., (W. H. D. Fountain, agent, New-York,) the best hay and dung forks.

E. Watts, Flatbush, L. I., the second best hay and dung forks.

F. & F. R. Taylor, Brasher Falls, N. Y., (A. B. Allen & Co. and Quincey & Delapierre, agents, New-York,) the best variety and best finished hay and dung forks.

FOR SPECIAL PREMIUMS.

We decide that Messrs. A. B. Allen & Co., No. 189 and 191 Water street, New-York, exhibited the largest variety and best assortment of agricultural implements offered for competition; and that, in our opinion, the articles thus exhibited embrace the latest improvements, and appear to be constructed of the best materials and finished in a workmanlike manner. And that John Mayher & Co., New-York, exhibited the second best collection.

Of the new inventions, never before exhibited at the fair of the American Institute, we deem the following three the best:

George Page, Baltimore, Md., an anti-friction rotary mould board plow.

Eddy & Co., Union Village, Washington county, N. Y., a horse power.

David Hartness, Raisin, Mich., (S. C. Hills & Co., New-York, agents,) a harvest and grain rake.

All which is respectfully submitted.

PAUL STILLMAN,

Chairman.

REPORT OF COMMITTEE ON FARMS AND GARDENS.

AMERICAN INSTITUTE, Sept. 6, 1848

The Visiting Committee, appointed by the American Institute to examine gardens and farms, repaired to the farm of Richard and John Cooper, at Bushwick, four miles and a half from Williamsburgh, where Henry Meigs, on behalf of the committee, with their approval, made the following notes on the spot.

Tomatoes, of the finest quality about sixteen hundred bushels, for which they received on the average $37\frac{1}{2}$ cents per bushel. The first sales in the market of New-York, were at \$2 per bushel, and the last at one shilling a bushel.

Peppers, long and round, about 40 bushels, worth ten shillings a bushel. These long peppers, intended for Cayenne, were planted very closely, in order that the peppers might be small. The product would average about 400 bushels per acre.

Lima Beans, 2400 bushels, which yielded about an average of 40 cents a bushel.

Cabbages, from 9,000 to 10,000; worth from \$200 to \$300.

Peas, early, 542 bushels, yielded an average 75 cents a bushel.

String Beans, between 8 and 900 bushels; average 40 cents a bushel.

Potatoes, 1,000 bushels; worth on the average 68 cents a bushel.

Refugee Beans and Cabbages took the place of the early potato.

Indian Corn, several acres of the large white flint 8-row corn; generally large and fine ears. This was manured by putting one shovel full of ashes of anthracite coal on the top of each hill. Here was a noble growth of stalks and ears.

The culture of this farm is as perfect as we have ever seen. If a premium had been offered for weeds, no one could have made it worth while to look for them. The rows straight, sufficient distances between them, and all the plants carefully placed so as to give each the best supply of air and light.

These young farmers work constantly, and also employ four able men during summer, two horses and two mules, and they keep two cows.

The committee refer to the account of the visit to the farm last year, and now add, that in their opinion, this is a model farm for a small one, and deserves the praises of all men.

JOHN W. CHAMBERS,
HENRY MEIGS,

JAMES DEPYSTER, *Chairman*.
BENJAMIN AYCRIGG.

The following account has been furnished by Messrs. R. & J. Cooper:

Bushwick, October 19, 1848.

We produced in the year 1848, on our farm of 30 acres,

Peas, 542 bushels, sold at 3s per bushel,.....	\$203 25
Lima beans, 236 bushels, sold at 4s 6d per bushel,.....	132 50
String beans, 786 bushels, sold at 3s 6d per bushel,.....	337 62
Potatoes, 1,100 bushels, sold at 5s 6d per bushel,.....	756 25
Tomatoes, 1,500 bushels, sold at 3s per bushel,.....	562 50
Peppers, 33 bushels, sold at 10s per bushel,.....	41 25
Turnips,	100 00
Cabbages,.....	100 00
Green corn,.....	40 00
Wheat, 80 bushels,	
Shelled corn, 200 bushels,.....	
Hay, 20 tons,.....	
Cost of manure, \$450	
do of labor, \$250	
	\$700

REPORT ON THE TRENTON IRON WORKS.

To the Board of Managers :

GENTLEMEN—The Committee on the subject of the Trenton Iron Works,

REPORT :

That on Wednesday, the 18th of October, they visited the said works, and were much gratified with their extent, perfection and activity.

A minute account, giving a detail of facts known personally to themselves, would have required more time than could have been spared from the other duties of the committee, as members also of the board of managers. But as far as time allowed investigation, the following account, (drawn up by one who is intimately acquainted with the works,) was corroborated by the examination of the committee, and it is therefore adopted as part of this report.

THE TRENTON IRON WORKS. The Trenton Iron Works were erected by Peter Cooper, of New-York. They were commenced in May, 1845, and went into operation in October following, producing bar iron and wire rods. In February, 1846, Mr. Cooper commenced preparing the works for the manufacture of heavy railroad iron, under a contract with the Camden and Amboy Railroad Co., for two thousand tons, at \$79 per ton, cash, at Trenton. In July following, the first rail was made, since which time the works have turned out about 18,000 tons, which have been laid in seven different States, including Michigan and Louisiana. A great variety of patterns have been made, varying from 50 to 70 lbs. per lineal yard. In every case, the quality has been pronounced far superior to the English article. In 1847, Mr. Cooper found that an act of incorporation would better protect his interest, and the Trenton Iron Company was accordingly organised, but no new parties associated.

The mill covers two acres of ground, has twenty double puddling furnaces, five double heating furnaces, and eight sets of weighing and finishing rolls, constantly in operation.

The whole cost of the works, water power and real estate at Trenton, has been over \$300,000, some of which has been raised by way of loan, or on mortgage. The number of men employed is about five hundred. The weekly wages vary from four to five thousand dollars.

The capacity of the establishment for producing iron, is greater than any other in this country.

The following is the report of the work done in the week previous to the visit of the committee :

Puddling furnaces worked from Monday 3 o'clock P. M., to Saturday, 6 A. M. Made 292 tons 10 cwt. 0 qrs. 10 lbs. of puddled bars. The reheating furnaces worked from Monday 9 o'clock A. M., to Saturday noon. Reheated, 197 tons 09 cwt. 0 qrs. 17lbs. of tops and bottoms.

The rail mill furnaces worked from noon on Monday, to Saturday 3 o'clock P. M., and made, 334 tons 15 cwt. 1 qr. 19lbs. of rails, weighing 70 lbs per yard, for the Hudson River Railroad Co.

Total iron heated in the week, 824 tons 14 cwt. 2 qrs. 18 lbs. ||
Coal burnt, 555 tons 10 cwt. 2 qrs. 14 lbs., exclusively anthracite iron.

The work of the mill during the present week, if not interrupted by accident, will considerably exceed the above. The total value of the rails made last week, was \$22,000, delivered in New York.

One fact is worthy of notice, that the first two thousand tons cost to make, \$75 per ton. The cost was then brought down to \$70 per ton, then \$65 per ton, and now the rails are produced for about \$60 per ton, all the effect of experience and improved machinery. Still further improvements will probably effect a further reduction in cost, as the manufacture of rails is only about three years old in this country.

Besides the works at Trenton, the Trenton Iron Co. own the famous Andover iron mine, which contains an inexhaustible supply of the very best quality of ore, such as the finest quality of Swedish and Russian iron is made from. They have just completed the largest blast furnace in the country, near Easton, for the purpose of smelting this ore into pig iron for the supply of the rolling mill at Trenton, and a second one is now in process of completion, when the company will manufacture from the ore all the way, twelve thousand tons of rails per annum, it is believed at the lowest cost possible in this country, delivered on tide water, at the present prices of labor, and of a quality superior to any heretofore made.

B. AYCRIGG, *Chairman.*

New-York, Oct. 18, 1848.

LIST OF PREMIUMS

AWARDED BY THE MANAGERS OF THE TWENTY-FIRST
ANNUAL FAIR [OF THE AMERICAN INSTITUTE, OCTOBER,
1848.

AGRICULTURAL AND HORTICULTURAL DEPARTMENT.

THOROUGH BRED, BLOOD, AND GRADE HORSES.

Mortimer De Motte, 15 E. 16th-street, for the best blood horse,
"Trustee," a silver cup having been before awarded. Diploma.

George M. Patchen, Brooklyn, L. I., for a trotting stallion, "Cas-
sius M. Clay." Diploma.

George M. Patchen, Brooklyn, L. I., for a filley. Diploma.

George W. Hunt, Newtown, L. I., for a stallion, "Prince Albert."
Diploma.

J. H. Clearwater, Bloomfield, N. J., for a bay colt, 3 years old.
Diploma.

C. T. Howell, Howard House, for a gray Norman colt. Diploma.

Jackson Odell, Greenburgh, Westchester co., N. Y., for a stallion.
Diploma.

J. C. Lockwood, New-Windsor, N. Y., for the stallion "Excel-
sior," 4 years old. Diploma.

M. Van Cott, Yorkville, N. Y., for a trotting stallion, "Premi-
um," 3 years old. Diploma.

W. E. Gray, 25 Warren-street, for a beautiful bay gelding. Di-
ploma.

Benjamin Blakeslee, Plymouth, Conn., for a blood mare for all
farming purposes. Diploma.

Benjamin Blakeslee, Plymouth, Conn., for a colt. Diploma.

Jackson Odell, Greenburgh, Westchester co., N. Y., for a thorough bred mare. Diploma.

Jackson Odell, Greenburgh, Westchester co., N. Y., for a sorrel colt. Diploma.

John Neefus, Flatlands, L. I., for a mare, 3 years old. Diploma.

John Neefus, Flatlands, L. I., for a mare, 2 years old. Diploma.

J. N. Blakeslee, Watertown, Conn., for a stallion. Diploma.

MATCHED HORSES.

R. M. Blackwell, Astoria, L. I., for the best pair of matched horses. Silver cup, \$10.

John Carll, Flushing, L. I., for a pair of matched horses. Silver medal.

FARM HORSES.

Albert Emmans, Flatlands, L. I., for the best pair of farm horses. Silver cup, \$10.

John H. Smith, Albany, N. Y., for a pair of sorrel matched horses. Silver medal.

Roswell L. Colt, Paterson, N. J., for a pair of farm horses. Silver medal.

MULES.

D. S. Mills, Newtown, L. I., for the best pair of mules. Silver cup, \$10.

JACKS.

John A. Pool, New-Brunswick, N. J., for the best jack. Silver cup, \$8.

NATIVE STOCK.

Thomas Bell, Morrisania, N. J., for the best native cow. Silver cup, \$10.

Lewis G. Morris, Fordham, N. Y., for the best native heifer. Silver medal.

FULL BREED STOCK.

George Vail, Troy, N. Y., for the best short horned bull. Silver cup, \$15.

Lewis G. Morris, Fordham, N. Y., for the best short horned yearling bull. Silver cup, \$8.

John Cannon, New-Brighton, S. I., for the best short-horned bull calf. Silver medal.

James Bathgate, Morrisania, N. Y., for the best short-horned cow. Silver cup, \$15.

George Vail, Troy, N. Y., for the best short-horned heifer. Silver cup, \$8.

George Vail, Troy, N. Y., for the best short-horned heifer calf. Silver medal.

W. H. Scott, 51 William-street, for the short-horned bull, "Warbeck." Diploma.

W. H. Scott, 51 William-street, for a short-horned heifer. Diploma.

William Watson, Westchester, N. Y., for short-horned bull, "Taurus." Diploma.

Gerard Crane, Somers, Westchester county, N. Y., for a short-horned heifer. Diploma.

Lewis B. Titus, Westchester county, N. Y., for a short-horned cow. Diploma.

Thomas Bell, Morrisania, N. Y., for a short-horned cow. Diploma.

Lewis G. Morris, Fordham, N. Y., for a short-horned cow, "Snow-drop." Diploma.

Lewis G. Morris, Fordham, N. Y., for a short-horned cow. Diploma.

E. K. Collins, Rye, N. Y., for a short-horned bull, "Sheridan." Diploma.

Wm. Whitney, Morristown, N. Y., for a short-horned bull, "Daemon." Diploma.

H. Whitlock, North Salem, N. J., for the best Devon bull. Silver cup, \$15.

H. T. Davis, Dutchess county, N. Y., for the best bull calf. Silver medal.

J. N. Blakeslee, Watertown, Conn., for the best Devon cow. Silver cup, \$15.

J. N. Blakeslee, Watertown, Conn., for the best Devon heifer. Silver cup, \$8.

Wm. Watson, Westchester county, N. Y., for the best Ayrshire bull. Silver cup, \$15.

Morgan G. Colt, Paterson, N. J., for the best Ayrshire bull calf. Silver medal.

Morgan G. Colt, Paterson, N. J., for the best Ayrshire cow. Silver cup, \$15.

William Watson, Westchester county, N. Y., for the best Ayrshire heifer. Silver cup, \$8.

Roswell L. Colt, Paterson, N. J., for the best Alderney bull. Silver cup, \$15.

Roswell L. Colt, Paterson, N. J., for the best Alderney bull calf. Silver medal.

Roswell L. Colt, Paterson, N. J., for the best Alderney cow. Silver cup, \$15.

Roswell L. Colt, Paterson, N. J., for the best Alderney heifer. Silver cup, \$8.

Roswell L. Colt, Paterson, N. J., for the best Alderney heifer calf. Silver medal.

GRADE STOCK.

James Bathgate, Morrisania, N. Y., for the best grade bull, "Boston." Silver cup, \$10.

Lewis G. Morris, Fordham, N. Y., for the second best grade bull, "Fordham." Silver medal

Lewis G. Morris, Fordham, N. Y., for the best grade bull calf, "Fordham 4th." Silver medal.

Thomas Bell, Morrisania, N. Y., for the best grade cow, "Beauty." Silver cup, \$10.

H. Thorne, Bloomingdale, N. Y., for the best grade heifer. Silver medal.

Lewis G. Morris, Fordham, N. Y., for the best grade heifer calf. Silver medal.

James Bathgate, Morrisania, N. Y., for the best cow in milk. Silver cup, \$8.

Thomas Bell, Morrisania, N. Y., for the second best cow in milk. Silver medal.

Lewis G. Morris, Fordham, N. Y., for the third best cow in milk. Trans. N. Y. State Ag. Soc.

WORKING OXEN.

Joseph Blakeslee, North Salem, N. Y., for the best yoke of working oxen. Silver cup, \$15.

J. N. Blakeslee, Watertown, Conn., for the second best 5 yoke of oxen. Silver medal.

J. N. Blakeslee, Watertown; Conn., for the best team of working oxen, 5 yoke. \$25.

FAT CATTLE.

F. Cheeseman, Poughkeepsie, N. Y., for the best pair of fat cattle. Silver cup, \$15.

D. Barnes, Westchester co., N. Y., for the best fat steer. Silver medal.

Thomas Bell, Morrisania, N. Y., for the best fat cow. Silver medal.

SHEEP.

J. N. Blakeslee, Watertown, Conn., for the best merino buck. Silver cup, \$8.

H. Whitlock, North Salem, N. Y., for the best Saxon buck. Silver cup, \$8.

H. Whitlock, North Salem, N. Y., for the best Saxon merino ewes. Silver cup, \$8.

J. N. Blakeslee, Watertown, Conn., for the three best merino ewes. Silver cup, \$8.

E. Wait, Montgomery, N. Y., for the best Southdown buck. Silver cup, \$8.

John Wait, Montgomery, N. Y., for the three best Southdown ewes. Silver cup, \$8.

John Wait, Montgomery, N. Y., for the best Southdown lambs. Silver cup, \$8.

Peter Pirnie, East Chester, N. Y., for the best long woolled buck. Silver cup, \$8.

Peter Pirnie, East Chester, N. Y., for the best long woolled ewes. Silver cup, \$8.

I. & N. Hallock, Milton, N. Y., for the best three long woolled lambs. Silver cup, \$8.

FAT SHEEP.

John Dick, White Plains, N. Y., for the best long woolled fat sheep. Silver cup, \$8.

I. & N. Hallock, Milton, N. Y., for the second best long woolled fat sheep. Silver medal.

E. Wait, Montgomery, N. Y., for the best fat Southdown sheep. Silver cup, \$8.

J. N. Blakeslee, Watertown, Conn., for the best fat merino sheep. Silver cup, \$8.

SWINE.

E. Wait, Montgomery, N. Y., for the best boar. Silver cup, \$8.
L. G. Morris, Fordham, N. Y., for the second best boar. Diploma.
Samuel Love, 53d-street and 6th Avenue, for the best sow. Silver cup, \$8.

J. G. Morris, Fordham, N. Y., for the second best sow. Diploma.
I. & N. Hallock, Milton, N. Y., for the best shote. Silver medal.
I. & N. Hallock, Milton, N. Y., for the best lot of pigs. Silver cup, \$8.

Samuel Love, 53d-street and 6th Avenue, for a Berkshire bear. Diploma.

SHEPHERD DOGS.

Robert Collins, for the best shepherd dog. Farmer's Library.

POULTRY.

Roswell L. Colt, Paterson, N. J., for the best pair of China geese. Poulterer's Companion.

Roswell L. Colt, Paterson, N. J., for the best pair of Java geese. Poulterer's Companion.

Roswell L. Colt, Paterson, N. J., for the best pair of wild geese. Poulterer's Companion.

Roswell L. Colt, Paterson, N. J., for the best pair of Muscovy ducks. Poulterer's Companion.

Roswell L. Colt, Paterson, N. J., for the best pair of common ducks. Poulterer's Companion.

Joseph Davis, Moorstown, N. J., for the best pair of Capon fowls. Cock's Poultry Book.

Joseph Davis, Moorstown, N. J., for the best pair of Jersey blue fowls. Cock's Poultry Book.

L. H. Martin, Paterson, N. J., for the best pair of Spanish fowls. Cock's Poultry Book.

N. P. Bailey, King's Bridge, N. Y., for the best pair of Poland fowls. Cock's Poultry Book.

WOOL.

J. N. Blakeslee, Watertown, Conn., for the best 25 fleeces of wool, for clothing. Silver cup, \$15.

FARMS.

Wm. H. Morris, Morrisania, N. Y., for the best farm of 400 acres. Silver cup, \$15.

Richard & John Cooper, Bushwick, L. I., for the best farm of 30 acres. Silver cup, \$15.

FLOWER GARDENS.

John A. Dayton, Brooklyn, L. I., for the best cultivated and most tastefully arranged flower garden. Silver cup, \$10.

Henry Steele, Jersey City, for the second best flower garden. Silver medal.

AGRICULTURAL PRODUCTIONS.

Roswell L. Colt, Paterson, N. J., for the best varieties of Indian corn. Silver cup, \$8.

J. Edmund Body, Staten Island, for the best 40 ears white corn. Colman's European Agriculture.

William Watson, West Farms, N. Y., for best 40 ears yellow corn. Washington's Agricultural Correspondence.

David Johnson, Flatbush, L. I., for four choice varieties of corn. Washington's Letters on Agriculture.

E. H. Kimball, Flatlands, L. I., for the best bushel of wheat. Silver cup, \$8.

Henry Robinson, Newburgh, N. Y., for a bushel of superior wheat. Washington's Agricultural Correspondence.

Roswell L. Colt, Paterson, N. J., for the best bushel of buckwheat. Colman's European Agriculture.

James Weeden, Newtown, L. I., for a bushel of good buckwheat. Washington's Agricultural Correspondence.

George Nesbitt, Hobart, Delaware county, N. Y., for the best bushel of oats. Silver medal.

Patrick Flood, Castleton, L. I., for a bushel of superior oats. Washington's Agricultural Correspondence.

George Nesbitt, Hobart, Delaware county, N. Y., for three bushels of superior seed peas. Trans. American Institute.

HOPS.

D. Brown, Exton, Madison county, N. Y., for the best bidd of hops. Silver medal.

E. Leland, Morrisville, N. Y., for a bale of fine hops. Trans. N. Y. State Ag. Soc.

PRODUCTS OF THE DAIRY.

Brewster Helms, Orange co., N. Y., for 25 lbs. super excellent butter. Silver cup, \$8.

John Holbert, Chemung co., N. Y., for 25 lbs. of delicious flavored butter. Silver medal.

M. Newkirk, Orange co., N. Y., for 25 lbs. of superb butter. Farmer's Library.

M. L. Thompson, Orange co., N. Y., for 25 lbs. of fine family butter. Trans. Am. Inst.

Henry Robinson, Newburgh, N. Y., for a sample of good butter. Trans. Am. Inst.

S. Garabrant, 15 Front-street, for delicious American dairy cheese. Silver cup, \$8.

P. W. Stebbins, 15 Front-street, for a rich flavored American dairy cheese. Trans. N. Y. State Ag. Soc.

S. D. Morrison, Hudson, N. Y., for a choice imitation English cheese. Silver medal.

James Smith, North Canaan, Mass., for a fine flavored imitation English cheese. Washington's Ag. Cor.

Hyslop & Coffin, 43 Front-street, for extra fine pineapple cheese. Colman's European Agriculture.

William Wilson, Herkimer, N. Y., for fine pineapple cheese. Trans. N. Y. State Ag. Soc.

Stone & Mills, Ashtabula co., Ohio, for a super-excellent cheese, (1,500 lbs.) Silver cup, \$8.

H. Burrell & Co., 15 Front-street, for an excellent cheese, (1,300 lbs.) Silver medal.

A. E. Austin, Ashtabula co., Ohio, for a cheese of superior quality. Silver medal.

FLOUR AND MEAL

Hecker & Brothers, Croton Mills, Cherry-street, for a barrel of super-excellent flour. Silver medal.

Hecker & Brothers, Croton Mills, Cherry-street, for a barrel of choice superfine flour. Colman's European Ag.

J. K. Wing, Albany, N. Y., for a barrel of excellent superfine flour. Gardner's Farmers' Dictionary.

Samuel Warne, Mount Pleasant Mills, for a barrel of extra fine kiln dried Indian meal. Silver medal.

Franks & Stuart, Warren co., N. Y., for a barrel of fine kiln-dried Indian meal. Gardner's Farmers' Dictionary.

Hecker & Brothers, Croton Mills, Cherry-street, for a barrel of Graham or unbolted flour. Silver medal.

Hecker & Brothers, Croton Mills, Cherry-street, for farina, groats and macaroni. Diploma.

PLOWING.

William Gourley, farmer to H. Robinson, for the best plowing. Silver cup, \$8.

Asa B. Munn, Orange, N. J., for the second best plowing. Silver medal.

Matthew Rae, for the third best plowing. Diploma.

SPADING.

Joseph Mullery, for the best spading of ground, 20 + 10 feet. Silver cup, \$8.

W. P. Lodge, for the second best spading. Silver medal.

J. P. Lodge, for the third best spading. Diploma.

TESTING OF PLOWS AT WHITE PLAINS.

Miner & Horton, Peekskill, N. Y., for the best plow, turning a furrow 16 inches, and 8 inches deep. Silver cup, \$8.

John Mayher & Co., 195 Front-street, for the 2d best plow, turning a furrow 16 inches wide and 8 inches deep. Silver medal.

B. Myers, Newark, N. J., for the best plow, turning a furrow 12 inches wide and 6 inches deep. Silver cup.

John Moore, 193 Front-street, for the 2d best plow, turning a furrow 12 inches wide and 6 inches deep. Silver medal.

VEGETABLES.

E. W. Fiske, Gowanus, L. I., for the choicest assortment of culinary vegetables. Silver cup, \$8.

Roswell L. Colt, Paterson, N. J., for the best varieties of vegetable roots for cattle. Silver cup, \$8.

E. H. Kimball, Flatlands, L. I., for the best 12 long blood beets. Bridgeman's Gardeners' Assistant.

Charles Williams, Harsimus, N. J., for the best turnip rooted beets. Am. Agriculturist.

J. C. Thompson, Tompkinsville, S. I., for the best sugar beets.
N. Y. Farmer & Mec.

W. H. Hendrickson, Middletown, N. J., for the best mangelwurtzel beets. Am. Agriculturist.

E. H. Kimball, Flatlands, L. I., for the best Cape brocoli.
Bridgeman's Gardener's Assistant.

R. R. & J. R. Bennett, Fort Hamilton, N. Y., for the best six heads of cauliflower. Am. Agriculturist.

E. H. Kimball, Flatlands, L. I., for the best drumhead cabbage.
Trans. N. Y., State Ag. Soc.

E. H. Kimball, Flatlands, L. I., for the best Savoy cabbage.
Trans. Am. Ins.

J. & P. Henderson, Harsimus, N. J., for the best carrots for the table. N. Y. Far. & Mec.

William Watson, West Farms, N. Y., for the best carrots for cattle. Am. Agriculturist.

Roswell L. Colt, Paterson, N. J. for the best twelve roots of celery. Trans. N. Y. State Ag. Soc.

William C. White, Bloomingdale, N. Y., for twelve roots of fine white solid celery. Trans. Am. Ins.

R. K. Delafield, S. I., for the best six egg plants. Vol. of the Cultivator.

J. Edmond Body, S. I., for the best peck of white onions. Bridgeman's Gardener's Assistant.

E. H. Kimball, Flatlands, L. I., for the best peck of yellow onions.
N. Y. Far. & Mec.

William Watson, West Farms, N. Y., for the best peck of red onions. Am. Agriculturist.

J. Edmond Body, S. I., for the best twelve parsnips for the table.
Trans. Am. Ins.

E. H. Kimball, Flatlands, L. I., for the best twelve parsnips for cattle. Trans. N. Y. State Ag. Soc.

John Brill, Harsimus, N. J., for the best peck of seedling potatoes.
Farmers' Library.

James Weeden, Newtown, L. I., for the best peck of potatoes for the table. Monthly Journal of Agriculture.

Mrs. Joshua Jones, Hell Gate, for a peck of excellent potatoes.
Bridgeman's Gardeners' Assistant.

J. Edmond Body, S. I., for the best peck of potatoes for cattle.
Vol. of the Cultivator.

David Johnson, Flatbush, L. I., for three choice varieties of potatoes. Trans. N. Y. Ag. Soc.

William Watson, West Farms, N. Y., for several varieties of fine potatoes. Trans. Am. Ins.

Garret G. Bergen, Brooklyn, L. I., for the best three cheese pumpkins. N. Y. Far. & Mec.

M. R. McGarrity, West Hoboken, N. J., for the best three cattle pumpkins. Bridgeman's Gardeners' Assistant.

Robert Selkirk, Bethlehem, Albany county, N. Y., for the best and largest pumpkin. Am. Agriculturist.

John Upton, 21st street, for the best twelve roots of salsify. Trans. Am. Ins.

J. W. & S. Halden, Bloomingdale, N. Y., for the best three squashes. Am. Agriculturist.

Charles G. Griffin, Bloomingdale, N. Y., for the best and largest squash. Vol. of the Cultivator.

J. W. & S. Halden, Bloomingdale, N. Y., for the best tomatoes. Trans. Am. Ins.

J. W. & S. Halden, Bloomingdale, N. Y., for the best white flat turnips. Bridgeman's Gardeners' Assistant.

E. H. Kimball, Flatlands, L. I., for extra large red top turnips. Vol. of the Cultivator.

S. T. Jones, New-Brighton, S. I., for the best yellow turnips. N. Y. Far. & Mec.

W. F. Williams, jr., Bull's Ferry, N. J., for the best Russia turnips. Vol. of the Cultivator.

Joseph Clowes, Harsimus, N. J., for three choice varieties of culinary vegetables. Trans. N. Y. State Ag. Soc.

George Witherspoon, New-Brighton, S. I., for three varieties of superb culinary vegetables. Trans. Am. Ins.

Mrs. Joshua Jones, Hell Gate, N. Y., for five fine varieties of culinary vegetables. Trans. N. Y. State Ag. Soc.

Walter F. Williams, jr., Bull's Ferry, N. J., for delicious Valparaiso squashes. Trans. Am. Ins.

G. Thompson, Camden county, N. J., for extra fine peppers. Trans. Am. Ins.

D. C. Van Winkle, Coxsackie, N. Y., for fine beets and egg plants. Trans. Am. Ins.

FRUIT.

Macintosh & Co., Cleveland, Ohio, for the choicest and greatest variety of fruit. Silver cup, \$8.

Marcus L. Ward, Newark, N. J., for seventeen choice varieties of apples. 6 Nos. Hovey's Fruits of America.

William Watson, West Farms, N. Y., for twelve varieties of fine apples. Downing's Horticulturist.

Abijah Harrison, Orange, N. J., for nine excellent varieties of apples. Bridgeman's Gardeners' Assistant.

M. Rowe, Newark, N. J., for three choice varieties of apples. Trans. N. Y. State Ag. Soc.

W. S. Carpenter, 468 Pearl street, for the best winter apples. Prince's Treatise on Fruits.

R. T. Underhill, Croton Point, N. Y., for the best native grapes. Silver medal.

Marcus L. Ward, Newark, N. J., for native grapes, (2 varieties.) Downing's Fruits, &c., of America.

Matthew Antonides, Brooklyn, L. I., for fine Isabella grapes. Hoare's Treatise on the Vine.

J. M. E. Valk, Flushing, L. I., for the best varieties of foreign grapes. Silver medal.

N. Durphy, Fall River, Mass., for six choice varieties of foreign grapes. 4 Nos. of Hovey's Fruits of America.

Roswell L. Colt, Paterson, N. J., for sixteen fine varieties of foreign grapes. Bridgeman's Gardeners' Assistant.

J. E. Edwards, Stonington, Conn., for three fine varieties of grapes. Kenrick's American Orchardist.

E. Simmons, Worcester, Mass., for fine nectarines. Trans. Am. Institute.

Samuel Walker, Roxbury, Mass., for the best and greatest variety of pears. 6 Nos. Hovey's Fruits of America.

Hovey & Co., Boston, Mass., for excellent varieties of pears. Downing's Fruits &c. of America.

W. J. Wilcomb, Flushing, L. I., for five fine varieties of pears. Bridgeman's Gardeners' Assistant.

Charles H. Raberg, Totawa, N. J., for the best table pears. Kenrick's American Orchardist.

T. B. Jackson, Newtown, L. I., for the best winter pears. Prince's Treatise on Fruits.

S. T. Jones, New Brighton, S. I., for the best assortment of quinces. Bridgeman's Gardeners' Assistant.

W. Watson, West Farms, N. Y., for seventeen fine quinces. Kenrick's American Orchardist.

R. T. Underhill, Croton Point, N. Y., for extra large quinces. Prince's Treatise on Fruits.

Noah T. Clark, Cornwall, N. Y., for quinces and apples. Farmer's Library.

Ellwanger, Barry & Rowe, Rochester, N. Y., for excellent varieties of apples. 4 Nos. Hovey's Fruits of America.

T. C. Munn, Orange, N. J., for three celebrated varieties of apples. Kenrick's American Orchardist.

Charles Berrian, Fordham, N. Y., for forty large pippin apples. Trans. Am. Inst.

J. W. Van Pelt, Brooklyn, L. I., for fourteen extra large pippin apples. Trans. Am. Inst.

B. & G. Haviland, for two fine varieties of apples. Trans. N. Y. State Ag. Soc.

Samuel Carhart, Raritan, N. J., for beautiful seedling apples. Trans. N. Y. State Ag. Soc.

C. T. Smith, Nyack, N. Y., for esteemed varieties of apples. Downing's Fruits &c. of America.

H. W. Tibbitts, White Plains, N. Y., for choice varieties of apples. Downing's Fruits &c. of America.

A. Coe, Newark, N. J., for apples, peaches and pears. Bridgeman's Gardeners' Assistant.

Theodore L. Provost, Greenville, Greene county, N. Y., for five varieties of grapes. Trans. N. Y. State Ag. Soc.

E. W. Fiske, Gowanus, L. I., for good grapes, pears and quinces. Downing's Fruits &c. of America.

Lewis Prevost, Astoria, L. I., for six varieties of pears. Bridgeman's Gardeners' Assistant.

G. W. Obert, Rocky Hill, N. J., for fine free stone peaches. Hovey's Magazine of Horticulture.

W. H. Hendrickson, Middletown, N. J., for fine late peaches. Trans. Am. Ins.

J. P. Hoff, Bloomingdale, N. Y., for seedling peaches. Trans. Am. Institute.

Leonard B. Kipp, Mount Pleasant, N. Y., for two bushels of excellent pippin apples. Trans. Am. Ins.

J. P. Dickey, Gerrysville, Livingston county, N. Y., for a barrel of apples. Trans. Am. Ins.

Andrew Corse, Fordham, N. Y., for fine apples and pears. Trans. Am. Ins.

FLOWERS.

J. M. Thorburn & Co., 15 John-street, for the largest display of dahlias. Silver cup, \$8.

Mateo Donadi, corner 44th-street and Bloomingdale Road, for a superb display of dahlias. Silver medal.

Charles Moré, 98th-street, corner 3d Avenue, for a fine display of dahlias. Boudoir botany.

Lewis Prevost, Astoria, L. I., for a display of fine dahlias. Downing's Horticulturist.

Thomas Dunlap, 635 Broadway, for choice dahlias. Hovey's Magazine of Horticulture.

Thomas Hogg & Son, 70th-street, near Avenue 3, for a good display of dahlias. American Flower Garden Directory.

E. W. Fiske, Gowanus L. I., for a large supply of dahlias. Mrs. Loudon's Ladies' Flower Garden.

Charles W. Zeiss, Newark, N. J., for a supply of dahlias and other flowers. Bridgeman's Gardeners' Assistant.

E. W. Fiske, Gowanus, L. I., for a splendid ornamental design of cut flowers. Silver medal.

Mayer & Co., 37 John-street, for an ornamental design of rustic work. Hovey's Magazine of Horticulture.

S. Pettit, Brooklyn, L. I., for a well grown cactus. Trans. Am. Institute.

Mrs. Joshua Jones, Hell Gate, N. Y., for a campanula pyramidalis. Mrs. Loudon's Ladies' Flower Garden.

Mateo Donadi, corner 44th street and Bloomingdale Road, for several varieties of choice cut flowers. Downing's Horticulturist.

Charles Moré, 98th street, cor. 3d Avenue, for a fine assortment of roses and cut flowers. The American Flora.

E. W. Fiske, Gowanus, L. I., for a large supply of roses and other flowers. Parson's Rose Manual.

Isaac Buchanan, 17th-street, near 5th Avenue, for fine specimens of roses, &c. Parson's Rose Manual.

Alexander Love, Jersey City, N. J., for dahlias and cut flowers. Prince's Manual of Roses.

E. W. Fiske, Gowanus, L. I., for upwards of 20 splendid bouquets. Silver medal.

J. & P. Henderson, Harsteus, N. J., for fine bouquets of choice flowers. Hovey's Magazine of Horticulture.

Mrs. V. C. Smith, Brooklyn, L. I., for several beautiful bouquets. The American Flora.

Andrew Reid, 163 11th-street, for choice bouquets. American Flower Garden Directory.

Charles Moré, 98th-street, cor. 3d Avenue, for beautiful ladies' bouquets. Prince's Manual of Roses.

Alfred Bridgeman, 878 Broadway, for a basket of choice roses. Downing's Landscape Gardening.

E. W. Fiske, Gowanus, L. I., for a basket of roses, &c. The American Flora.

Mrs. V. C. Smith, Brooklyn, L. I., for a dish of cut flowers. Prince's Manual of Roses.

H. W. Tibbitts, White Plains, N. Y., for the best basket of wild flowers. American Flower Garden Directory.

J. W. Wood, Bloomingdale, N. Y., for a basket of wild flowers. Bridgeman's Florists' Guide.

Henry T. Ford, Middlesex county, N. J., for a large lemon tree in fruit and blossom. Trans. Am. Ins.

Charles W. Zeiss, Newark, N. J., for a fruit bearing orange tree. Trans. Am. Institute.

Alexander Love, Jersey City, N. J., for a basket of flowers. Trans. Am. Institute.

Alfred Bridgeman, 878 Broadway, for splendid varieties of dahlias. Trans. Am. Ins.

F. Turner, Staten Island, for several varieties of flowers. Trans. Am. Ins.

Special Premiums on Flowers exhibited October 9th, 1848.

Charles Moré, 98th-street, cor. 3d Avenue, for 20 splendid varieties of roses. Silver medal.

Isaac Buchanan, 17th-street, near 5th Avenue, for 20 choice varieties of roses. Browne's Trees of America.

Mateo Donadi, cor. 44th-street and Bloomingdale Road, for 20 fine varieties of roses. Parson's Rose Manual.

J. M. Thorburn, 15 John-street, for 24 superb varieties of dahlias. Silver medal.

Thomas Dunlap, 635 Broadway, for 24 excellent varieties of dahlias. Browne's Trees of America.

Mateo Donadi, cor. 44th-street and Bloomingdale Road, for 24 good varieties of dahlias. The American Flora.

Lewis Prevost, Astoria, L. I., for new seedling dahlias. Silver medal.

Daniel Boll, 50th-street, cor. Bloomingdale Road, for 30 fine specimens of roses. Downing's Landscape Gardening.

MISCELLANEOUS.

Benj. Haviland, 5 Orange-street, for a good specimen of honey. Diploma.

Remington & Co., 191 Christie-street, for very well pickled cucumbers and onions. Diploma.

J. Reckhow, 142 Liberty-street, for well preserved peaches and limes, also pickled oysters. Diploma.

AGRICULTURAL IMPLEMENTS.

C. J. Burrall, Geneva, N. Y., for the very best cultivator. Diploma.

Eddy & Co., Union Village, Washington county, N. Y., for best threshing machine. Diploma.

J. Hickey, Flatbush, N. Y., for best fanning machine. Silver medal.

S. Wilkinson, South Middleton, N. Y., for grain cradles of excellent workmanship. Diploma.

Simon Ingersoll, Astoria, N. Y., for best seed sower. Diploma.

J. R. & R. Downer, Castleton, N. Y., for a good horse rake. Diploma.

Israel Lamborn, Chester Co., Pa., for best tubular bee-hive. Silver medal.

Wm. Partridge, 253 Bleecker-street, for the best churn. Diploma.

M. Crowell, A. B. Allen & Co., agents, for 2d best churn. Diploma.

M. P. Coons, Lansingburgh, N. Y., H. B. Dawson, agent, for specimens of improved fence, wood and iron combined. Silver medal.

Daniel Pease, S. C. Hills & Co., agents, 43 Fulton-street, for a machine for cleaning buckwheat. Silver medal.

D. Perley, E. Walpole Mass., W. H. D. Fountain, 85 Broad-st., agents, for the best hay and dung forks. Diploma.

E. Watts, Flatbush, L. I., for the 2d best dung forks. Diploma.

F. & T. R. Taylor, Brasher Falls, N. Y., for the best finished hay and dung forks. Diploma.

Eddy & Co., Union Village, Washington county, for the best iron beam plough. Silver medal.

Hall & Speer, Pittsburgh, Pa., for the 2d best iron beam plough. Diploma.

Eddy & Co., Union Village, Washington county, for the best side hill plough. Diploma.

C. J. Burrall, Geneva, N. Y., for a revolving land side plough. Diploma.

Ruggles, Nourse & Mason, Worcester, Mass., A. B. Allen & Co., agents, 187 Water-street, for a centre draft plough. Diploma.

George W. D. Culp, Allensville, Indiana, for a combined cider mill and press. Silver medal.

Ruggles, Nourse & Mason, Worcester, Mass., for the best revolving cylinder knife straw and stalk cutter. Silver medal.

George Catchpole, Geneva, N. Y., for the best revolving shear knife straw and stalk cutter. (Silver medal having been before awarded.) Diploma.

William Hovey, for the 2d best revolving cylinder knife straw and stalk cutter. Diploma.

C. J. Burrall, Geneva, N. Y., for the 2d best straw and stalk cutter, with improved knife with sickle-edge. Diploma.

B. Densmore, Geneva, N. Y., for the best reciprocating knife straw and stalk cutter. Silver medal.

J. C. Rich, Penfield, N. Y., Moore & Co., 183 Front-street, agents, for the second best reciprocating knife straw and stalk cutter. Diploma.

Jesse Urmy, Wilmington, Del., for a hay, straw and stalk cutter and grinder. (Silver medal having been before awarded.) Diploma.

John Romans, Marshalton, Pa., for a vibrating fodder cutter. Diploma.

SPECIAL PREMIUMS.

A. B. Allen & Co., 187 Water street, for the greatest variety and best assortment of agricultural implements. Gold medal.

J. Mayher & Co., for the 2d best variety and assortment of agricultural implements. Silver medal.

J. L. Mott, 254 Water street, for the best garden ornaments, (vases and chairs.) Silver medal.

NEW INVENTIONS.

George Page, Baltimore, Md., for anti-friction rotary mould-board ploughs. Silver medal.

Eddy & Co., Union Village, Washington county, N. Y., for a horse-power, for agricultural purposes. Silver medal.

S. C. Hills & Co., 43 Fulton street, for Hartness' harvest or grain rake. Silver medal.

MANUFACTURING & MECHANICAL DEPARTMENT.**ARCHITECTURAL AND MECHANICAL DRAWINGS.**

R. Mead, jr., 92 2d Avenue, for model of gothic cottage. Diploma.
William Ballard, 7 Eldridge street, for a drawing for a monument. Diploma.

J. F. Shearman, 170 Broadway, for a drawing of a locomotive. Diploma.

BANK LOCKS.

P. H. Butterworth, Morris county, N. J., for a superior bank lock. Silver medal

BATHS.

John Locke, 47 Ann street, for the best combination chamber bath. Silver medal.

BELLS.

Andrew Menceley, Troy, N. Y., for best church bells. (Gold medal having been before awarded.) Diploma.

BOOKS, BINDING AND STATIONERY.

Rich & Loutrel, 61 William street, for manifold writers. (Silver medal before awarded.) Diploma.

J. B. Cheeseman, 55 Gold street, for music preservers. Diploma.

W. W. Rose, 19 Wall street, for the best blank books. Silver medal.

George F. Nesbitt, Wall, corner Water street, for second best blank books. Diploma.

J. C. Koch, 183 William street, for best book-binding. Silver medal.

James Martin, 43 James street, Brooklyn, for the best book-binding, entirely finished by hand. Diploma.

E. Walker & Son, 114 Fulton street, for books elegantly bound. Diploma.

J. H. Duyckinck, 86 Wall street, for improved guard covers for letters. Diploma.

Platner & Smith, Lee, Mass., White & Sheffield, agents, for the best letter paper. Silver medal.

Manning & Howland, Troy, N. Y., for hardware paper, made from Manilla grass. Silver medal.

Richard Smyth, 327, Stanton-street, for beautiful and superior parchment and vellum. Silver medal.

George Bruce & Co., 13 Chamber-street, for complete and handsome printing types. Diploma.

J. W. Wilcox, Boston, Mass., for electro type plates. Silver medal.

John Bell, Harlem, N. Y., for superior type cases. Diploma.

Thos. Wildes, 30 Old Slip, for hydrostatic ink fountains. Diploma.

Minors' Work.

William P. Weiss, 121 Fulton-street, for wood cut printing. \$3 and a certificate.

GENTS' BOOTS AND SHOES.

David Mundell, Brooklyn, L. I., for the best double sole boots. Silver medal.

George Hammann, 422 Broadway, for the best light boots. Silver medal.

LADIES' BOOTS AND SHOES.

Benjamin Shaw, 71 Canal-street, for the best ladies' boots and shoes. Silver medal.

BRUSHES.

J. H. Dunnel, 82 Sixth-street, for ingenious shaving brushes. Diploma.

CABINET WARE.

C. Leicht, 10 Leonard-street, for best inlaying cabinet work. Gold medal.

Horatio Allen, Novelty Works, for best sofa bedstead and tables. Silver medal.

H. W. Kingman, 438 Pearl-street, for best sofa bedstead. Silver medal.

J. Needham, 30th-street, for the second best sofa bedstead. Diploma.

T. Franck, 475 Broadway, for best extension tables. Silver medal.

John Massey, 215 Borwery, for best invalid bedstead. Silver medal.

Jacob Steurer, 80 19th-street, for the best cane chair seats. Silver medal.

J. Bradley, 317 Pearl-street, for best gilded and inlaid chairs. Silver medal.

George S. Henry, 130 Forsyth-street, for second best fancy chairs. Diploma.

Thomas Brooks, Brooklyn, L. I., for best rosewood parlor chair. Silver medal.

W. H. Cook, 92 Broadway, for second best rosewood parlor chair. Diploma.

R. Ostrander, 523 Broome-street, for best inlaid work box. Diploma.

H. N. Rogers, 6 Thompson-street, for second best inlaid work. Diploma.

A. Robinson, 71 Bayard-st., for the best reading board. Diploma.

J. A. Roberts, 388 Houston-street, for a good cottage chair. Diploma.

Finn & Bros., N. Y., for a new mode of constructing parlor furniture. Silver medal.

O. H. Nichols, 479 Broadway, for the best music stool. Diploma.

A. E. Kendall, 377 Pearl-street, for the best office chair. Diploma.

R. H. & J. G. Isham, 71 Fulton-street, for the best sand paper. Silver medal.

J. Whitmore, 169 Fulton-street, for the second best sand paper. Diploma.

R. H. & J. G. Isham, 71 Fulton-street, for sand, emery and corundum paper. Diploma.

W. C. Gardiner, 69 Gold-street, for black walnut bedsteads, with improved screws. Diploma.

C. C. & J. Briggs, for patent table sofas. Diploma.

Commerford & Redgate, 468 Broadway, for cane seat office chairs. Diploma.

Charles Chinnock, 54 Cliff-street, for an improved joint for mounting looking glasses, music-stands, &c. Diploma.

Edward Dally, 81 Orchard-street, for a child's chair. Diploma.

Charles Chinnock, 54 Cliff-street, for a portable reading easel. Diploma.

E. R. Sammis, 64 Gold-street, for imitation rosewood chairs. Diploma.

L. Ingersoll, 71 Bowery, for a French cottage chair. Diploma.

CAKES AND CONFECTIONARY.

Belknap & Wilt, 4 Jefferson-street, for best plum cakes. Diploma.

M. B. & O. F. Wentworth, 103 Greenwich-street, for the second best plum cakes. Diploma.

N. Raynor, 372 Grand-street, for best icing on plum cakes. Diploma.

P. Haas, No. 1 South William-street, for best ornamental temple. Diploma.

John Loughurst, for the best confectionary. Diploma.

H. Tateosyan, 52 Second-street, for superior fig paste. Diploma.

R. Y. Lawrence, 11½ 3d Avenue, for very excellent egg biscuit and fancy crackers. Diploma.

CARPETING AND OIL CLOTH.

J. B. Palmer, Bloomfield, N. Y., for superior rag carpet. Diploma.

Thomas Fair, 181 Greenwich-street, for superior rag and list carpet. Diploma.

William Lewis, 452 Pearl-street, for the best furniture oil cloth. Diploma.

CARRIAGES, SLEIGHS, AXLES, &c.

John Stephenson, 27th-street. for an omnibus, of very superior workmanship. Gold medal.

C. & A. Beatty, 87 Third Avenue, for an omnibus of very superior workmanship. Silver medal.

J. H. Wood, Poughkeepsie, N. Y., for the best sleigh. Silver medal.

Wood, Tomlinson & Co., for a good pony sleigh. Diploma.

George D. Underhill, 162 Mercer-street, for a light wagon, a good piece of work. Silver medal.

Henry J. Kip, Newark, N. J., for a farm wagon. Silver medal.

John G. Ostrom, Rhinebeck, N. Y., for an ox cart. Knapp premium, \$25, and a Certificate.

E. Davis, Jersey City, N. J., for a dirt cart. Silver medal.

Le Count & Ward, 165 Chrystie-street, for a cart. Silver medal.

U. Reynolds, 162 Suffolk-street, for a child's carriage. Diploma.

James N. Joralemon, Newark, N. J., for best coach axles. Silver medal.

Harrison & Breese, Newark, N. J., for best mail axles. Silver medal.

Minors' work.

Robert Fielding, 260 Houston-street, for the best child's carriage. \$10 and a Certificate.

CARVING.

Minors.

P. H. Tulley, 48 Vesey-street, for the best carving. \$5 and a Certificate.

CASTINGS.

Jordan L. Mott, 264 Water-street, for the best iron castings. Diploma.

CIVIL ENGINEERING—DOCKS AND BRIDGES.

Nathaniel Rider, Harlem, N. Y., for model of an iron bridge. (Gold medal before awarded.) Diploma.

W. J. McAlpin, Brooklyn, L. I., for the dry dock at Brooklyn. Gold medal.

CLOCKS AND WATCHES.

Bliss & Creighton, 42 Fulton-street, for marine chronometers—entirely of American manufacture. Gold medal.

D. Eggert & Son, 239 Pearl-street, for superior finish on marine box chronometers. Silver medal.

Marine Clock Company, New-Haven, Conn., for a marine clock. Silver medal.

Frederick Kraimer, New-York, for an ingenious clock. Diploma.

P. L. De Mory Gray, Brooklyn, for a correct drawing of the lever, cylinder and duplex escapement. Diploma.

CLOTHING, &c.

Stilwell & Montross, 112 Fulton-street, for best clothing. Silver medal.

J. Vanderbilt, 36 Maiden-lane, for second best clothing. Diploma.

Martha Jane Cornwell, 274 Grand-street, for the best boys' clothing. Silver medal.

Benedict & Burnham, Waterbury, Conn., for a beautiful assortment of gilt buttons. Silver medal.

Thomas Oliver, 157 Broadway, for the best mode of delineating garments. Silver medal.

Otis Madison, 58 Third Avenue, for the second best mode of delineating garments. Diploma.

COMBS AND MOROCCO GOODS.

Z. M. Quimby, 302½ Broadway, for best shell combs, of very superior workmanship. Silver medal.

E. Newell, Brooklyn, L. I., for the second best shell combs. Diploma.

C. Coles, 187 Broadway, for the best morrocco cases. Silver medal.

Minors' Work.

George W. Walker, 152 Broadway, for morocco cases. \$5 and a Certificate.

COOPERAGE.

McEwen & Thompson, 55 Goerck-street, for the best iron bound barrels and 20 gallon casks. Silver medal.

E. A. Hopkins, 153 Third-street, for the second best specimens of coopers' work. Diploma.

Miners.

James Schenck, 38 Water-street, for a wood hooped coffee barrel. \$5 and a Certificate.

T. Burger, 38 Water-street, for a wood hooped tight barrel. \$5 and a Certificate.

COTTON GOODS.

New-York Mills, Oneida co , N. Y., Charles Carville, agent, 26 Broad-street, for best exhibition of cotton goods. Gold medal.

Lonsdale Company, Providence, R. I., for bleached sheetings and muslin for window shades, and nankeens. Diploma.

Conestogo Steam Mills, Lancaster, Penn., Lord, Warren, Salter & Co., agents, 41 Broad-street, for the best brown sheeting. Silver medal.

Wicapee Cotton Mills, Fishkill Landing, N. Y., Rankin & Free-land, agents, for the second best brown sheeting. Diploma.

Portsmouth Manufacturing Company, Portsmouth, N. H., Stone, Swan & Co., agents, 48 Exchange Place, for printed lawns, well designed and executed. Silver medal.

New-York Mills, Oneida county, N. Y., Fisher Howe & Hamilton, agents, 21 Broad-street, for cottonades, a very superior article. Silver medal.

W. H. Plummer, Paterson, N. J., Richards & Blake, agents, 51 Exchange Place, for black and white prints, beautifully designed and executed. Silver medal.

Charles Baxter, 9 Cedar-street, for jappaned muslin. Diploma.

Merrimack Manufacturing Company, Manchester, N. H., Stone, Swan & Co., agents, 48 Exchange Place, for cassimere de Eccosee and muslin de lane. (Gold medal having before been awarded.) Diploma.

William Adams, 30 Perry-street, for cotton buckram, a good article. [Diploma.]

Benjamin Marshall, Troy, N. Y., Charles Carville, agent, 26 Broad street, for very superior gingham. Silver medal.

Lancaster Quilt Company, Lancaster, Mass., Seaver & Dunbar, agents, 31 Broad-street, for handsome Lancaster quilts. Silver medal.

Dickey & Taggart, Paterson, N. J., for cotton yarn twist, No. 22. Diploma.

W. B. Leonard, New Windsor, N. Y., Leonard, Hone & Co., agents, 39th Pine street, for very superior satinnet warp. Silver medal.

CUTLERY.

R. Heinisch, Newark, N. J., for the best tailors' and other shears and scissors. Gold medal.

Leonard & Wendt, 29 and 31 Gold-street, for second best tailors' and other shears and scissors. Silver medal.

Lamson, Goodnow & Co., Shelburne Falls, Mass., for best butchers' knives, silver medal.

W. C. Yeates, 203 West 16th-street, for farriers' and heavy cutting-up knives. Diploma.

F. Read & Co., Boston, Mass., for good shoe knives. Diploma.

Holley & Merwin, Salisbury, Conn., for best small cutlery. Gold medal.

Bradshaw & Perlee, 5 Platt-street, for very good table knives and forks. Silver medal.

Minors' Work.

John Wild, 160 Division-street, for the best small cutlery. \$10 and a certificate.

DAGUERREOTYPES.

J. Gurney, 189 Broadway, for the best daguerreotype likenesses. Silver medal.

M. M. Lawrence, 152 Broadway, for second best daguerreotype likenesses. Diploma.

Mc Clees & Germon, Philadelphia, Penn., for daguerreotype likenesses. Diploma.

Meade & Brothers, Albany, N. Y., for calotypes. Silver medal.

DENTISTRY.

Jones, White & Co., 264 Broadway, for the best artificial teeth. Gold medal.

Brockway & Son, Brooklyn, L. I., for second best artificial teeth. Silver medal.

Morris Levett, 260 Broadway, for patent enamel plates for artificial teeth. Diploma.

DIES AND CHASING.

S. Dodd, Bloomfield, N. J., for best book-binders' stamps. Silver medal.

W. M. Tompson, 169 William-street, for second best book-binders' stamps. Diploma.

John Smith, 89 Reade-street, for best chasing for harness work. Diploma.

J. Freeman, Williamsburgh, L. I., for best brands of iron castings. Diploma.

DRUGS AND CHEMICALS.

Wm. Blake, Akron, O., for best fire and water-proof paint. Silver medal.

J. M. Albright, Schenectady, N. Y., for second best fire and water-proof paint. Diploma.

Paulin, Rogers & Keeney, 73 West-street, for best solution for removing unpleasant odors. Diploma.

L. Feutchwanger, 18 Cortlandt-street, for second best solution for removing unpleasant odors. Diploma.

Smith & Curlett, Baltimore, Md., and J. P. Veeder, agent, 88 Front-street, for best adamantine candles. Silver medal.

W. L. Kendall, Providence, R. I., for the second best adamantine candles. Diploma.

Earle & Co., 68 Washington-street, for best soda saleratus. Diploma.

J. Dwight & Co., 25 10th Avenue, for second best soda saleratus. Diploma.

W. Batchelor, 2 Wall-street, for the best liquid hair dye. Diploma.

O. M. Ballard, 51 Cortlandt-street, for second best liquid hair dye. Diploma.

J. T. Duff, 156 Rivington-street, for the best starch. Diploma.

B. Hall & Sons, Bloomingdale, for the second best starch. Diploma.

J. W. Kelly, 146 William-street, for the best lemon sugar. Diploma.

J. Vandeventer, 87 Barclay-street, for best paste blacking. Silver medal.

Stockbridge & Richards, East Whatley, Mass., for second best paste blacking. Diploma.

Kemp & Knight, Chelsea, Mass., for superior liquid blacking. Diploma.

J. E. Hover, Philadelphia, Penn., for best black writing ink. Diploma.

J. J. Jackson, 57 Crosby-street, for second best black writing ink. Diploma.

E. G. Alden, Boston, for best lard oil. Silver medal.

Litchfield & Co., New-York, for the second best lard oil. Diploma.

C. Pavey, 494 Houston-street, for harness composition. (A silver medal having been before awarded.) Diploma.

O. M. Ballard, 51 Cortland-street, for the best dentifrice. Diploma.

R. G. Gardner, 179 Broadway, for the second best dentifrice. Diploma.

J. S. Scofield, 168 Division-street, for the best tooth paste. Diploma.

Thomas Manson, 22 8th Avenue, for the second best tooth paste. Diploma.

Walker & Sons, 61 Elizabeth-street, for the best mustard. Diploma.

Haines & Kinsey, 212 West-street, for the second best mustard. Diploma.

Jeffries & White, 147 Troy-street, for the best refined brimstone. Diploma.

Charles Smith, 105 Elizabeth-street, for the best bottled soda water, with syrups. (Silver medal before awarded.) Diploma.

W. Eagle, 169 Fulton-street, for second best soda water, with syrups. Diploma.

J. Macy & Sons, 189 Front-street, for refined sperm candles, and a beautiful specimen of patent sperm. Silver medal.

A. Warner, 107 John-street, for well preserved Shakers' herbs. Diploma.

C. C. Nasson, 164 Nassau-street, for water-proof composition. Diploma.

James Cuthbert, Williamsburgh, L. I., for a silvering fluid. Diploma.

E. Lyons, 420 Broadway, for magnetic powder for destroying insects. Diploma.

Withington, Wilde & Welch, 7 Dutch-street, for an assortment of powdered drugs and spices. Diploma.

Haskell & Merrick, 10 Gold-street, for powdered drugs, pure and fine. Diploma.

M. Mitchell, 66 Dey-street, for maple sugar. Diploma.

Eugene Depuy, 609 Broadway, for well prepared flavoring extracts. Diploma.

P. M. Lapice, Louisiana, for fine specimens of white sugar, made direct from the cane. Silver medal.

Valcour Aime, Louisiana, for fine specimens of white sugar, made direct from the cane. Silver medal.

Osgood & Brother, Louisiana, for fine specimens of white plantation sugar. Silver medal.

Union White Lead Manufacturing Co., Brooklyn, L. I., for very pure dry white lead. Silver medal.

East Brooklyn white lead and paint works, N. Ripley, agent, 132 Water-street, for an excellent specimen of white lead in oil. Diploma.

Bodine, Boeder & Co., Philadelphia, Penn., for purified gelatine. Diploma.

R. Heslewood, 372 Washington-street, for dry colors for painters. Diploma.

E. G. Alden, Boston, Mass., for superior lard in bladders. Diploma.

John Correll, 172 Forsyth-street, for superior cocoa and sweet chocolate. Diploma.

J. P. Wilson, 29 Greene-street, for hydriodate of potash. Diploma.

F. W. Halbfleisch, Green Point, N. Y., for fine specimens of red prussiate of potash. Diploma.

C. Partridge, 3 Cortland-street, for superior matches without sulphur. (Silver medal before awarded.) Diploma.

EDGE TOOLS AND HARDWARE.

R. Hoe & Co., 29 and 31 Gold-street, for the best circular saws, mill saws, cane knives, &c., a rich and beautiful display, the workmanship of which would do credit to any manufacturer, in any country. Gold medal.

A. W. Metcalf, 63 and 65 Centre-street, for very superior brass locks, fine specimens, and successfully competes with the English articles. Silver medal.

Bruno Clinchard, Newark N. J., for a fine display of well-cut files. Silver medal.

Benedict & Ball, Chicopee, Mass., for molasses and oil faucets, a new design. Diploma.

R. M. Hill, 120 Wooster-street, for window sashes with fasteners, a new article, simple and ingenious. Diploma.

Smith, Snell & Co., Stourbridge, Mass., for the best augers. Diploma.

Sanford, Parmelee & Co., Meriden, Conn., for the best pump auger. Diploma.

Philip Quigley, Newark, N. J., for carpenters' tools. Diploma.

William Wheeler, Troy, N. Y., for a good and cheap bolt. Diploma.

W. Beach, Philadelphia, Penn., for useful curry combs. Diploma.

A. Vittaly, Newark, N. J., for shoemakers' awls. (Silver medal before awarded.) Diploma.

Ephraim Arnold, 9th street, for carpenters' and coopers' edge tools. Silver medal.

ENAMELLED IRON WARE.

P. B. Savery, Philadelphia, Penn., P. H. Marshall, agent, 4 Gold street, for very superior enamelled iron ware. Gold medal.

ENGRAVINGS.

A. F. Kinnersley, 64 John street, for the best wood engraving. Silver medal.

W. Howland, 69 Nassau street, for the second best wood engraving. Diploma.

Sarony & Major, 117 Fulton street, for the best lithography. Silver medal.

F. & S. Palmer, 42 Ann street, for the second best lithography. Diploma.

Endicott & Co., 59 Beekman street, for specimens of lithography. Diploma.

Minors.

Hamilton C. Browne, 42 Crosby street, for the best wood engravings. \$10 and a certificate.

J. L. D. Mathies, 75 Nassau street, for the second best wood engravings. \$5 and a certificate.

FINE ARTS.

S. W. Shaw, Georgia, for the best oil painting. Silver medal.

J. Rolson, Oliver street, for the second best oil painting. Diploma.

Palmer & Bond, for the best water-colored drawing. Diploma.

J. R. Waterson, 25 Walker street, for the second best water-colored drawing. Diploma.

J. A. McDougall, 251 Broadway, for the best miniatures. Silver medal.

J. W. Whitfield, 311 Broadway, for the best cameo likenesses. Silver medal.

B. Borrell, 251½ Broadway, for the second best cameo likenesses. Diploma.

H. W. Herbert, Newark, N. J., for original sketches from nature. Silver medal.

Henry Hayes, pupil public school No. 7, for pen drawings. Diploma.

Hiram Christman, pupil public school No. 7, for pen drawings. Diploma.

F. Silva, pupil public school No. 7, for pen drawings. Diploma.

S. Ellis, 247 Broadway, for the best medallion likenesses. Silver medal.

Charles C. Wright, 80 Nassau street, for a medal (head of Washington Allston.) Silver medal.

Reade & Co., 104 Avenue C, for the best stained glass. Silver medal.

William Jeffreys, 446 Pearl street, for the best painted window shades. Diploma.

Leonard Sense & Victor Flagella, 53 Mercer street, for models in plaster. Diploma.

William Hunt, 320 Broadway, for painting in imperial wax colors. Diploma.

H. Brunswick, National Theatre, for modeling in wax. Diploma.

Jeffreys & Ticknor, 446 Pearl street, for an enamelled Persian painting. Diploma.

Edward Weir, jr., 240 Mott street, for the best ornamental painting. Silver medal.

A. P. Moriarty, 135 West-Eighteenth street, for the second best ornamental painting. Diploma.

William Jeffreys, 446 Pearl street, for ornamental painting on panels. Silver medal.

H. S. Farley, 23 Canal street, for superior specimens of scagliola. Silver medal.

Minors' Work.

C. M. Lord, 97 Washington street, Brooklyn, for the best crayon drawing. \$5 and a certificate.

Uriah Dunphy, 283 Third Avenue, for a pencil drawing. \$3 and a certificate.

C. B. Croswell, 13, Seventeenth street, for plaster medals. \$3 and a certificate.

FIRE ARMS.

S. B. Amory, Goshen, N. Y., for the best double barrel rifle. Silver medal.

Allen & Thurbur, 201 Broadway, for best revolving and self-cocking pistols. Silver medal.

R. D. Sollace & Co., Mansfield Centre, Conn., for the best American percussion caps. Diploma.

J. W. Leavitt, 261 Water street, for the best compressed shot and bullets. Silver medal.

W. K. Van Allen, 2 Cortlandt street, for second best compressed bullets. Diploma.

Blunt & Syms, 44 Chatham street, for best twisted gun barrels. Silver medal.

Walter Hunt, 62 Gold street, for self-priming fire-locks. Silver medal.

FIRE WORKS.

Isaac Edge, jr., Jersey City, N. J., for best display of fire works. Silver cup.

J. W. Hadfield, Williamsburgh, L. I., for second best display of fire-works. Silver cup.

FISHING TACKLE.

J. & J. C. Conroy, 54 Fulton street, for the best fishing tackle of all kinds. Silver medal.

J. P. Casteaux, Newark, N. J., for a large assortment of trout and salmon flies. Diploma.

FLAX, HEMP, AND ITS MANUFACTURES.

Phoenix Mills, Paterson, N. J., N. H. Peck & Co., agents, 130 Front-street, for the best hemp duck. Silver medal.

Raritan Mills, Somerville, N. J., Grinnell, Minturn & Co., agents, 78 South-street, for the second best hemp duck. Diploma.

Rockport Steam Mills, Rockport, Mass., for the best cotton duck. Silver medal.

Phoenix Mills, Paterson, N. J., H. N. Peck & Co., agents, 130 Front-street, for the second best cotton duck. Diploma.

James Maull, Philadelphia, Penn., for patent seam canvass for sails. Silver medal.

Rockport Steam Mills, Rockport, Mass., for the best seine twine. Diploma.

Atlantic Mills, Brooklyn, N. Y., for colored cotton twine. Diploma.

Geo. W. Billings, Ill., for the best hemp. Silver medal.

Roe & Kercheval, St. Louis, Mo., Hewett, Lees & Co., agents, 44 Broad-street, for the second best hemp. Diploma.

American Hemp and Flax Co., for superior flax. Silver medal.

American Net and Twine Manufacturing Company, Boston Mass., for superior nets. Silver medal.

GAS AND GAS APPARATUS.

Burr & Brothers, Gold-street, for a new principle for mixing atmospheric air with gas, and for the best gas light. Gold medal.

Walworth, Nason & Guild, 79 John-street, for an improvement in the apparatus for making gas from rosin. Silver medal.

GLASS AND EARTHEN WARE.

Brooklyn Flint Glass Co., Brooklyn, L. I., J. Gillilan, agent, 30 South-William-street, for the best colored, plain and cut glass. Gold medal.

Berger and Walter, 39 Maiden Lane, for the second best colored, plain and cut glass. Silver medal.

Bennett & Brothers, Pittsburgh, Penn., W. S. Hammersly & Co., agents, 11 Old Slip, for the best Rockingham ware. Silver medal.

E. W. & J. M. Pruden, Elizabethtown, N. J., for the second best Rockingham ware. Diploma.

George M. Wheaton, N. Y., for enamelled glass jars. Diploma.

W. Oppitz, 95 Liberty-street, for superior engraving on glass. Silver medal.

WINDOW GLASS.

Redford Glass Co., Clinton county, N. Y., for crown window glass, a very superior article. Silver medal.

Richards & Brother, Philadelphia, Penn., for window glass. Diploma.

GOLD PENS.

Spencer & Rendell, 170 Broadway, for the best gold pens. Gold medal.

Levi Brown, 10 Front-street, Brooklyn, L. I., for the second best gold pens. Silver medal.

GUTTA PERCHA.

S. T. Armstrong, Fulton-street, for an exhibition of manufactures of gutta percha. Gold medal.

HATS CAPS, AND MANUFACTURED FURS.

John N. Genin, 214 Broadway, for the best silk hats. Silver medal.
Francis Degen, 9 Gold-street, for the second best silk hat. Diploma.

Gault & Ballard, 120 Maiden Lane, for the best otter caps. Silver medal.

Wildman, Stone & Co., Danbury, Ct., for a fine water-proof white wool hat. Silver medal.

Leopold Lang, 36 Maiden Lane, for specimens of muffs, capes and cuffs. Diploma.

Joseph Hoguet, 10 John-street, for specimens of manufactured furs. Diploma.

John N. Genin, 214 Broadway, for children's hats and caps, evincing skill and taste in patterns and style. Silver medal.

STRAW AND LEGHORN HATS.

Mrs. Kendall, 136 Bowery, for the best pamelas bonnets. Silver medal.

R. T. Wilde, 69 William-street, for the second best pamelas bonnets. Diploma.

H. C. Miles, 138 Water-street, for the best Sicilian bonnet. Diploma.

Thomas Young, 96 Bowery, for the best split straw bonnet. Diploma.

HOUSEHOLD UTENSILS.

Lord & Co., Chester, Ct., for waffle irons. Diploma.

Nathaniel Fenn, 374 Bleecker-street, for family and fancy bellows. Silver medal.

Waterbury Brass Co., Waterbury, Ct., for a brass kettle. Silver medal.

William Dolbeer, 269 Second-street, for the best bird cage. Diploma.

Smith, Torrey & Co., 50 Maiden Lane, for safe and refrigerator combined. Diploma.

Minors' Work.

James Brennan, 104 Elm-street, for the best copper tea kettle. \$5 and a Certificate.

Charles Luitz, 115 Varick-street, for second best copper tea kettle. \$3 and a Certificate.

INDIA RUBBER GOODS.

W. Rider & Brothers, 58 Liberty-street, for the best and greatest variety of India rubber goods. Gold medal.

Charles Goodyear, New-Haven, Conn., for India rubber maps of fine texture. Diploma.

Nelson Goodyear, New-York, for a portable India rubber life-boat. Silver medal.

Hayward Rubber Co., Colchester, Conn., Lovett & Southwick, agents, 259 Pearl-street, for the best India rubber shoes. Silver medal.

Newark India Rubber Manufacturing Co., Newark, N. J., for the second best India rubber shoes. Diploma.

Daniel Hodgeman, 27 Maiden-lane, for excellent India rubber garments, air-beds, cushions, &c. Diploma.

JAPANNING AND ENAMELLING.

G. A. Backus, 44 Fulton-street, for best japanning on papier maché, of American manufacture. Gold medal.

Henry Day, Boston, Mass., for the second best painting on papier maché. (Silver medal before awarded.) Diploma.

J. H. Trask, Brooklyn, L. I., for enamelling on glass. Diploma.

LAMPS AND CHANDELIERS.

Cornelius & Co., Philadelphia, Penn., Woram, Haughwout & Johnson, agents, 568 Broadway, for the best chandeliers, candelabras, &c. Gold medal.

Allcock & Allen, 341 Broadway, for second best candelabras. Silver medal.

Roberts, Eagles & Co., Newark, N. J., for best coach lamps. Silver medal.

J. Sutton, 11 Market-street, for a combination lamp, evincing much ingenuity. Diploma.

J. & T. Donaldson, 59 Vesey-street, for a gas chandelier. Diploma.

Capin & Molineaux, 272 Pearl-street, for best Britannia lamps and a miniature solar lamp. Diploma.

Benham & Whitney, 272 Pearl-street, for a fireman's lantern. Diploma.

J. Armstrong & Co., 113 Beekman-street, for a globe lamp. Diploma.

R. C. Overton, 12 Allen-street, for an improved double tube lamp. Diploma.

Endicott & Sumner, for a miniature solar lamp. Diploma.

LEATHER.

John Frees, Marbletown, N. Y., for ladies' sole leather. Silver medal.

Pratt & Robertson, Windham Tannery, Greene co., N. Y., for hemlock tanned dry hide sole leather. Silver medal.

T. Scott & Son, 3 Jacob-street, for black bridle leather. Diploma.

Geo. Kellogg, Winstead, Conn., for best American sheep and lamb skins, tanned in hemlock bark, shaved and finished. Silver medal.

Luman Foote, Canaan, Conn., for best strained basils and skivers. Silver medal.

L. Shepard & Son, Norfolk, Conn., for second best skivers, roans and saddle roans. Diploma.

David Hubbard, Glastonbury, Conn., for hog skins. Silver medal.

J. L. Chambers, 23 Ferry-street, for boot morocco. Diploma.

H. P. Graves, 156 West Seventeenth-street, for black glazed goat and kid morocco. Silver medal.

Schoonover & Klein, Mystic, Conn., for finished calf skins. Silver medal.

T. J. Kelley, 33 Ferry-street, for lace calf skins. Diploma.

John H. Bowie, 35 Ferry-street, for the best manufactured hose. Silver medal.

J. H. Ludlam, 46 Greene-street, for the second best manufactured hose. Diploma.

J. H. Bowie, 35 Ferry-street, for very superior leather fire buckets. Diploma.

P. Dignen, 899 Broadway, for colored sheep skin mats. Diploma.

W. G. W. Gaeger & Co., Philadelphia, Penn., for well-dressed buckskin, for piano forte manufacturers. Diploma.

LINEN GOODS.

H. H. Stevens, Webster, Mass., for linen diaper, twilled and plain crash. Silver medal.

New-England Jacquard Co., Providence, R. I., Kellogg & Otis, agents, 24 Beaver-street, for jacquard diaper. Diploma.

Miss Mary Train, New-Lebanon, N. Y., for fine home-made diaper. Silver medal.

LOCKS, DOOR SPRINGS, &c.

Call & Foster, Springfield, Mass., for the best night lock and latch. Silver medal.

S. M. Pye, Acquackanock, N. J., for second best night lock and latch. Diploma.

Pierpont, Mallory & Co., New-Haven, Conn., Davenport and Slipper, agents, 212 Water-street, for the best locks, mineral knobs and trimmings united. Gold medal.

Curtis, Morgan & Co., Meriden, Conn., for the 2d best locks, mineral knobs and trimmings united. Diploma.

N. G. Dubois, Brooklyn, L. I., for the best cabin door locks. Diploma.

J. Maxon, De Ruyter, N. Y., for the best door springs. Diploma.

Thomas Peck, Syracuse, N. Y., for a good door spring. Diploma.

Seymour & Brothers, Westmoreland, Oneida county, N. Y., for best blind butts, gate hinges, bolts, &c. Diploma.

M. & O. S. Judd, New Britain, Conn., for the best sash fasteners. Diploma.

Wildman & Hurlburt, Danbury, Conn., for an improved alarm lock. Diploma.

C. Hahn, Newark, N. J., for padlocks and trunk locks. Diploma.

Lewis Mossman, 19 Ann street, for trunk and chest locks. Diploma.

David B. Coles, Yonkers, N. Y., for an improved door latch. Diploma.

E. Morris, Burlington, N. J., for a patent improved combination latch and lock. Diploma.

Minors' Work.

James Hopper, 251 Canal street, for a chest lock. \$3 and a certificate.

MACHINE BLANKETS.

John Morrow, Paterson, N. J., for printers' blankets and paper makers' felts, of very superior kind. Silver medal.

E. B. Force, Red Mills, N. J., for superior printers' blankets. Silver medal.

MACHINERY, MODELS AND NEW INVENTIONS.

William Burdon, Brooklyn, L. I., for the best steam engines for all ordinary purposes. Gold medal.

Matteawan Machine Company, Matteawan, N. Y., for the second best steam engine. Silver medal.

Gerow & McCreary, 335 Stanton street, for model of a steam engine. Diploma.

Henry Turner, 76 Columbia street, for model of a steam engine. Diploma.

John Tremper, Little Britain, N. Y., for a rotary engine. Diploma.

J. Chaplin Howard, Williamsburgh, L. I., for a model of a revolving piston engine. Diploma.

H. R. Worthington & W. H. Baker, for a steam fire engine and pump. Gold medal.

Merrick & Towne, Philadelphia, Penn., for a steam hammer. Silver medal.

Paul Stillman, Novelty Works, for best steam and vacuum gage. (Silver medal having been before awarded.) Diploma.

John Greacan, jr., 44 Broadway, for best steam packing. Silver medal.

Boston Belting Company, Boston, Mass., for second best steam packing. Diploma.

T. Cuthbert, 52 Beaver street, N. Y., for the best steam felting for boilers. Diploma.

Paul Stillman, Novelty Works, for the best steam engine meter. Gold medal.

James Rodgers, 410½ Broadway, for the second best steam engine meters. (Silver medal before awarded.) Diploma.

Allen & Noyes, Greenbush, N. Y., for the best steam stuffing boxes. Silver medal.

Oliver Johnson, Charlestown, Mass., for second best steam stuffing boxes. Diploma.

H. R. Worthington & W. H. Baker, Williamsburgh, L. I., for

steam percussion gages. (Silver medal having been before awarded.)
Diploma.

Harrison & Hodgson, 2 Stanton street, for steam percussion gages.
Diploma.

West & Thompson, 29 Centre street, for best steam couplings.
Silver medal.

A. C. Ketchum, 193 Front street, for the second best steam couplings. Diploma.

E Crommelin, 127 Cedar street, for a safety attachment for steam engines. Diploma.

Daniel Griffin, 192 Broadway, for a heat generator for steam boilers. Gold medal.

Charles Ross & Co., 38 Broadway, for the best portable flour mills.
Gold medal.

Nichols & Marsh, Bridgeport, Conn., for the second best portable flour mills. Silver medal.

Charles Ross & Co., 38 Broadway for the best portable corn mills.
Silver medal.

Barber & Felton, Troy, N. Y., for the second best portable corn mill. Diploma.

Barber & Felton, Troy, N. Y., for best portable mill for feed.
Gold medal.

Charles Ross & Co., 38 Broadway, for second best portable mill for feed. Silver medal.

Kelsey & Son, 181 Avenue C, for an improvement in mill stones for grinding feed. Diploma.

W. P. Springer & Co., Allen & Paxon, agents, 134 Front street, for the best smut machine. Gold medal.

F. Harris & Sons, Brooklyn, L. I., for second best smut machine.
Silver medal.

Clark Jacobs, 249 Gold street, Brooklyn, L. I., for the best coffee mill. Diploma.

William B. North, Jersey City, N. J., for the best paint mill. Silver medal.

Clark Jacobs, 249 Gold street, Brooklyn, L. I., for the best rice hulling machine. Silver medal.

S. Schofield, Norwich, Conn., for the best water wheel regulator. (Silver medal before awarded.) Diploma.

H. Baldwin, Norwich, Conn., for the second best water wheel regulator. Diploma.

Frink & Prentiss, Jersey City, N. J., for a wood planing machine, (an improvement on Woodworth's for which a Gold medal has been before awarded.) Diploma.

O. Snow & Co., Meriden, Conn., for the second best wood planing machine. Silver Medal.

A. M. Freehand, 87 Mangin-street, for a superior iron planing machine. Gold medal.

Geo. B. Hartson, 42 Gold-street, N. Y., for an excellent iron planing machine. Silver medal.

Geo. B. Hartson, 42 Gold-street, for the best slide lathes, (large size.) Silver medal.

L. Cary, 98 Forsyth-street, for the second best slide lathes, (large size.) Diploma.

Harlow Isbell, Meriden, Conn., for the best slide lathe, (medium size.) Silver medal.

Geo. B. Hartson, 42 Gold-street, for the best large size hand lathe. Silver medal.

Walworth, Nason & Guild, 79 John-street, for the best small size hand lathe. Diploma.

G. W. Weeks, Boston, Mass., for the second best small size hand lathe. Diploma.

L. Cary, 98 Forsyth-street, for a foot lathe. Diploma.

John D. Ward, Jersey City, N. J., for the best drilling machine. (Silver medal having been awarded.) Diploma.

O. Gallagher, 40 Eldridge-street, for the second best drilling machine. Diploma.

U. Reynolds, 162 Suffolk-street, for an ingenious improvement in a drilling machine. Silver medal.

G. W. Weeks, Boston, Mass., for a drilling machine. Diploma.

Geo. B. Hartson, 42 Gold-street, for a drilling machine. Diploma.

M. W. Coles, Brooklyn, L. I., for a hand drill. Diploma.

M. W. Coles, Brooklyn, L. I., for a crab drill and a boring bar. Diploma.

S. Mower, Philadelphia, for the best screw cutting machine, with P. W. Gates's patent dies. Silver medal.

J. A. Fay & Co., 28 Fourth-street, for the best morticing machine for general purposes. Silver medal.

W. R. & A. Inslee, Newark, N. J., for the second best hand morticing machine. Diploma.

J. A. Fay & Co., 28 Fourth-street; for the best hub morticing machine. (Silver medal having been before awarded.) Diploma.

J. A. Fay & Co., 28 Fourth street, for a morticing and tenoning machine. (Silver medal before awarded.) Diploma.

J. A. Fay & Co., 28 Fourth-street. for an improved machine for boring and tenoning. Diploma.

J. A. Fay & Co., 28 Fourth street, for a venetian blind boring machine. Diploma.

Burt, Thatcher & Co., 153 Greenwich-street, for a power morticing machine. (Silver medal having been before awarded.) Diploma.

E. & T. Fairbanks & Co., St. Johnsbury, Vt., for the best platform scales. (Silver medal having been before awarded.) Diploma.

J. D. Dale, 101 Wall-street, for the second best platform scales. Diploma.

J. L. Brown, 234 Water-street, for the best counter scales. Diploma.

Charles J. Gayler, 128 Water-street, for the best fire-proof safes. (Silver medal having been before awarded.) Diploma.

J. & M. H. Holt, 302 Pearl-street, for the best boot crimping machine. Diploma.

Henry S. Davis, Waterville, N. Y., for the second best boot crimping machine. Diploma.

Smith W. Bullock, Peck Slip, for the best baling press for general purposes. (Silver medal having been before awarded.) Diploma.

C. Martine, Westchester Co., N. Y., for the second best baling press. Diploma.

Henry J. Kip, Newark, N. J., for the best horse shoes. Diploma.

Nathaniel Fenn, 374 Bleeker-street, for the best smiths' bellows. Diploma.

Asbury Newcomb, Brooklyn, L. I., for the second best smiths' bellows. Diploma.

F. & T. R. Taylor, Brasher's Falls, N. Y., for a double acting smiths' bellows. Silver medal.

J. L. Gatchel, Elkton, Md., for the best hydraulic rams. (Silver medal before awarded.) Diploma.

W. & B. Douglas, Middletown, Conn., for the second best hydraulic rams. (Silver medal before awarded.) Diploma.

W. & B. Douglas, Middleton, Conn., for an improvement in hydraulic rams, by which the ram may be used as a motive power. Silver medal.

A. G. Heckrotte, Wilmington, Del., for the best self-acting rail-road coupling. Silver medal.

J. Stimpson, Baltimore, Md., for a self-acting rail-road coupling. Silver medal.

C. B. Turner, Buffalo, N. Y., for a self-acting rail-road break. Silver medal.

Willis Humiston, Troy, N. Y., for the best candle mould. Diploma.

J. Garside, Newark, N. J., for the best stocks and dies. Diploma.

G. W. Sniffen & Co, Ramapo, N. Y., for second best stocks and dies. Diploma.

P. G. Gardiner, 49 Wall-street, for the best rail-road wheels. Gold medal.

A. F. Converse, Norwich, Conn., for the second best rail-road wheels. Diploma.

Rees & Hoyt, 69 Frankfort-street, for superior stretched leather bands, with improved rivets. Silver medal.

Wm. Kumbel, 33 Ferry-street, for superior stretched leather bands. Silver medal.

J. Von Schmidt, 48 Duane-street, for the best power force pumps. (Gold medal before awarded.) Diploma.

J. A. Brush & Co., 83 Pike-street, for the second best power force pump. Silver medal.

J. A. Brush & Co., 83 Pike-street, for the best hand force pump. Silver medal.

W. A. Metcalf, 65 Centre-street, for the second best hand force pump. Diploma.

N. Dodge, 634 Broadway, for a balance pump. Silver medal.

F. M. Ray, 100 Broadway, for the best India rubber rail-road springs. Gold medal.

Geo. Godfrey, Taunton, Mass., for the best fire brick. Silver medal.

Kreischer & Mumpeton, 62 Georck-street, for the second best fire brick. Diploma.

Calvin H. Preston, New-York, for continuous banding fire brick. Diploma.

New-York Pressed Brick Co., Staten Island, for the best common brick. Silver medal.

Doty & Travis, Croton, N. Y., for the second best common brick. Diploma.

Ananias Smith, Lockport, N. Y., R. J. Whittemore, agent, 225 Lewis-street, for the best stave dressing machine. Gold medal.

Judson & Pardee, New-Haven, Conn., for the second best stave dressing machine. Silver medal.

Ira Avery, Tunkhannock, Penn., Benjamin Hitchcock agent, 104 West Broadway, for the best washing machine. Diploma.

Bellows & Gilbert, corner of Allen and Stanton-streets, for the second best washing machine. Diploma.

Matteawan Machine Co., Matteawan, N. Y., for a line of shafting, pullies, couplings and hangers. Silver medal.

Matteawan Machine Co., Matteawan, N. Y., for a good small iron planing machine. Diploma.

Haviland & Tuttle, South Boston, Mass., for a centre discharge wheel. Diploma.

Geo. Page, Baltimore, Md., for a patent portable circular saw mill. Gold medal.

Geo. Page, Baltimore, Md., for an ingenious and self-adjusting windmill. Gold medal.

W. R. & A. Inslee, Newark, N. J., for a good cutting engine. Silver medal.

E. E. Lewis, 118 East Twenty-Eighth-street, for a good shingle, heading and stave machine. Silver medal.

A. Anson, Waterford, N. Y., for an excellent window sash moulding machine. Silver medal.

B. Howard, Brandon, Vt., for a good match splint machine. Silver medal.

Thomas J. Wells, for a saw mill for splitting boards. Silver medal.

P. Von Schmidt, 48 Duane-street, for an improved cotton gin. Gold medal.

Evans & Thompson, Paterson, N. J., for a new and excellent method of changing the speed of rail-road drawing heads. Silver medal.

Davidson, Parks & Woolson, Springfield, Vt., for an excellent cloth shearing machine. Silver medal.

B. Brundred, Paterson, N. J., for an improved spinner for cotton and worsted. Gold medal.

Matteawan Machine Co., Matteawan, N. Y., for an excellent cotton and worsted cop spinning throstle frame. Gold medal.

S. H. Sill, corner of Vesey and Greenwich-streets, for a good brad machine. (Silver medal before awarded.) Diploma.

Matteawan Machine Co., Matteawan, N. Y., for an excellent cotton drawing head machine. Gold medal.

S. T. Thomas, Westbrook, Me., for a very ingenious machine for making weavers' harness by power. (Vogel's Patent.) Gold medal.

Sam. Down, Manhattan Gas Works, Eighteenth-street, for a skeleton gas meter. Silver medal.

J. Francis, New-York, for a well covered top roller for cotton spinning. Diploma.

Matteawan Machine Co., Matteawan, N. Y., for a cast iron post for hitching horses. Diploma.

David Trow, Twenty-Sixth-street, for an improved iron frame silk winding machine. Diploma.

T. Marquis, Belleville, N. J., for an improved cotton flyer. Diploma.

Wm. Ballard, 7 and 11 Eldridge-street, for good specimens of jack screws. (Silver medal before awarded.) Diploma.

S. Whipple, Albany, N. Y., for a file cutting machine. Silver medal.

S. R. Parkhurst, 116 First Avenue, for a very excellent wool burring cylinder. Gold medal.

David Dick, Meadville, Penn., for an excellent toggle joint press, for various purposes. Silver medal.

T. S. Shephard, Gold-street, for a good circular saw arbor. Diploma.

Taylor & Flagler, 211 Water-street, for an improved jeweller's forge. Diploma.

J. T. Foster, for a good rock drilling machine. Silver medal.

Geo. Gage, Waterford, N. Y., for a good pruning shear. Diploma.

John D. Ward, Jersey City, N. J., for a large lathe screw. Diploma.

R. Lewis, 142 Chatham-street, for a simple and good bonnet stretcher. Diploma.

W. R. & A. Inslee, Newark, N. J., for an excellent tinner's shear, Silver medal.

Wm. Burdon, Brooklyn; N. Y., for an excellent piston head, metallic packing and engine for pumps. Diploma.

A. R. Carter, Newark, N. J., for an irregular turning machine. (Gold medal before awarded.) Diploma.

M. Fairman, E. F. Cushmun, agent, 38 Broadway, for a good scroll lathe chuck. Diploma.

Joseph Harvey, 470 West Twelfth-street, for galvanized cast iron ornaments. Diploma.

S. N. Risley, 278 Fifth-street, for cheap and simple dynamical pulley. Silver medal.

Thomas Davidson, 108 Ninth-street, for a good stop washer. Diploma.

Paul Stillman, Novelty Works, for workmanship on a McNaught's indicator, Silver medal.

Paul Stillman, Novelty Works, for marine hydrometers. Diploma.

S. B. Ostrander, 53 Mercer-street, for an ingenious machine for making pills and bullets. Diploma.

Henry G. Guyon, 97 Thompson-street, for a steam cotton press. Silver Medal.

J. Lightbody, Jersey City, for a jacquard silk machine. Diploma.

Ross & Butler, Providence, R. I., for a railroad sprinkler. Diploma.

Benj. H. Green, Princeton, N. J., for a carpenter's screw clamp. Diploma.

J. Hunter, 80 Grand-street, for a machine to punch and cut spectacle frames. Diploma.

Wm. Bennett, 282 Fifth-street, for specimens of wedge caulking. Silver medal.

G. E. Sellers, Cincinnati, O., for an important improvement in locomotives for ascending and descending inclined planes. Gold medal.

Joseph Dixon, Jersey City, N. J., for black lead crucibles of an excellent quality. Silver medal.

R. K. Colvin, Lancaster, Penn., for a good plumbers' joint. Diploma.

Fisher & Morris, Newport, Me., for an improved vice. Silver medal.

Joseph Goldie, 133 Attorney-street, for smiths' anvils and common vices. Diploma.

R. Steel, New-Haven, Conn., for an improved faucet. Diploma.

Lanson Steward, Jersey City, N. J., for patterns for cog wheels. Diploma.

F. J. Austin, corner of Centre and Reade streets, for excellent book binders' shears. Silver medal.

J. S. Greig, Walden, Orange Co., N. Y., for lattice iron fencing. Diploma.

J. B. Carter & Brothers, Boston, Mass., for a good coffee roaster. Silver medal.

Kennedy & Gelston, 6½ Prince-street, for a waste duster and flock cutting machine. Diploma.

A. P. Houghton, 204 Bleeker-street, for a cast iron vault light. Diploma.

Burdett & Dodd, 176 Chambers-street, for mining tools. Diploma.

Henry Nelson, Third Avenue, for pavers' tools. Silver medal.

W. M. Gibson, 349 Broadway, for an improvement in introducing a filter into Croton pipes. Silver medal.

Thos. C. Clarke, Philadelphia, Penn., for a good water filter and filtering medium. Silver Medal.

Wm. H. Sweet, 202 Canal-street, for a good reversible Croton filter and filtering medium. Silver medal.

W. H. Jennison, for an improved filtering medium. Silver medal.

George Gee & Brothers, 47 Eldridge-street, for specimens of iron plates for flooring. Diploma.

Joseph Dixon, Jersey City, N. J., for specimens of pure iron. Silver medal.

D. Pretlove, 24 Thames-street, for a good embossing machine. Silver medal.

W. H. Allen, Brooklyn, L. I., for a model of a self-balancing derrick. Diploma.

John Matthews, 131 Third Avenue, for a good bottling and corking machine. Diploma.

T. Lidgerwood, Navy Yard, Brooklyn, L. I., for a side lewis for hoisting heavy blocks. Silver medal.

A. Gilman, Wells & Webb, agents, corner Dutch and Fulton-streets, for a good card press. Diploma.

James Perry, 87 Eldridge-street, for a good cracker machine. Silver medal.

John V. Wilks, 16 Dean-street, Brooklyn, L. I., for a portable press or mangle. Diploma.

Charles Chinnock, 54 Cliff-street, for an improved axletree. Silver medal.

S. C. Hills & Co., 43 Fulton-street, for a good garden sprinkler. Diploma.

C. D. Wright, 245 Water-street, for a self-setting saw-mill tail block. Silver medal.

N. O. Mitchell, Gardiner, Maine, for a useful machine for turning treenails for ship building. Silver medal.

T. Richardson, 16 Jacob-street, for a model of tanning vats. Diploma.

Anthony Civill, 190 West-street, for a good mode of hanging grind stones. Diploma.

Charles Chinnock, 54 Cliff-street, for a useful ball and socket joint. Diploma.

James H. Johnson, Newark, N. J., for a good screw bedstead fastener. Diploma.

Mark Pool, Grand-street, Brooklyn, L. I., for a good hand pump for garden purposes. Diploma.

H. Betts, Peekskill, N. Y., for a good portable forge and bellows. Diploma.

F. U. Upham, Second Avenue, for specimens of blind staples. Diploma.

Charles S. Collier, Weathersfield, Vt., for self-weighing scales, a new and valuable invention. Silver medal.

Coats & Russell, Windsor, Conn., for important improvements in card sticking machines. Silver medal.

J. Judson, Oneida Co., N. Y., for an improvement applicable to planing and other machines. Silver medal.

H. T. Hyde, Troy, N. Y., for an ingenious model of a rail-road truck. Diploma.

John Johnson, 1 Doyer-street, for specimens of gas fittings. Diploma.

Vincent Brown, Buffalo, N. Y., for an improved plan of globular steam boilers. Diploma.

Vincent Brown, Buffalo, N. Y., for an improvement in paddle wheels. Diploma.

Daniel Griffin, 192 Broadway, for a plan for heating air for factories. (Gold medal before awarded.) Diploma.

Lewis Beach, Worcester, Mass., for a good specimen of carpenters' squares. Diploma.

C. A. Lent & Co., Newark, N. J., for an excellent specimen of buckles. Diploma.

A. Armbruster, 7 Harrison-street, for a superior xylographic engraving machine. Silver medal.

T. D. Jackson, & Co., 132 $\frac{1}{2}$ William-street, for the best hotel annunciator. (Gold medal before awarded.) Diploma.

E. J. Mallett, 11 Waverly Place, for an improvement in hotel annunciators, to take up the slack of the wire. Silver medal.

Erasmus B. Derby, Brooklyn, L. I., for specimens of roof painting. Diploma.

J. Weisman, Philadelphia, Penn., for incombustible metallic paint. Diploma.

W. S. McLean, 120 Wooster-street, for a good window fastener. Diploma.

American Window Trimming Co., for a window blind hinge. Diploma.

C. H. Farnham, Williamsburgh, L. I., for a window blind hinge. Diploma.

James Fowler, for an improved spade. Diploma.

O. C. Harris, Waterville, N. Y., for a good specimen of roofing. Diploma.

J. Sheldon, Rochester, N. Y., for a good specimen of wrought iron. Diploma.

Seth Boyden, Newark, N. J., for rolled zinc and zinc spelter metal of excellent quality. Silver medal.

C. C. Biers & Co., corner of Reade and Centre streets, for a good water closet. Diploma.

Alfred Hall, Perth Amboy, N. J., for a good common brick moulder. (Silver medal before awarded.) Diploma.

A. I. Cotheal, 49 Water-street, for zinc spelter ore from the Shawangunk mountains. Silver medal.

Joseph Dixon, Jersey City, N. J., for a good specimen of cast-steel. Silver medal.

Roys & Wilcox, Berlin, Conn., for very elegant and highly finished tinner's tools. Silver Medal.

G. A. Belcher, Saratoga Springs, N. Y., for a revolving clothes dryer. Diploma.

W. F. Kethchum, Buffalo, N. Y., for an improved mowing machine. Silver medal before awarded.) Diploma.

C. Luxton, 29 King-street, for an excellent nursery swing Diploma.

J. T. Townsend, Philadelphia, Penn., for an elastic swing. Diploma.

Thomas O. Leroy & Co., 263 Water-street, for good specimens of lead pipe. Diploma.

R. Sealey, 542 Pearl-street, for specimens of double tinned copper pipe. Diploma.

B. Sheridan, 45 Ann-street, for a superior sealing press. Diploma.

Richard M. Hoe, 29 Gold-street, for a type revolving press. Gold medal.

N. Y. Pressed Brick Co., Staten Island, for a brick machine. Gold medal.

MANUFACTURERS' ARTICLES, WEAVERS' REEDS, SHUTTLES, &c.

J. A. Gowdey & Son, Providence, R. I., for weavers' reeds made by machinery. Silver medal.

William Lowe, Jr., Woonsocket Falls, R. I., for the second best weavers' reeds. Diploma.

A. J. Williams, Utica, N. Y., for a set of patent jointless wire harness. Silver medal.

T. K. Earle, & Co., Worcester, Mass., for machine cards. (Silver medal having been before awarded.) Diploma.

Oscar Schenck & Co., 132 Water-street, for weavers' reeds. Diploma.

A. T. Williams, Utica, N. Y., for weavers' reeds. Diploma.

G. S. Lecroft, Fishkill, N. Y., for weavers' reeds. Diploma.

Oscar Schenck & Co., 132 Water-street, for revolving temples. Diploma.

Chauncey Andrews, Paterson, N. J., for machine bobbings. (Silver medal having been before awarded.) Diploma.

MATHEMATICAL AND PHILOSOPHICAL INSTRUMENTS.

R. E. House, Brooklyn, L. I., for a magnetic telegraph, an instrument of great ingenuity. Gold Medal.

J. B. Richards, 43 Eldridge-street, for workmanship on House's telegraph. Silver medal.

J. Atwood, 183 Broadway, for an elliptical compass. Silver medal.

James Prentice, 183 Broadway, for mathematical instruments. (Silver medal having been before awarded.) Diploma.

Henry M. Watkins, 58 Chatham-street, for mathematical instruments. Diploma.

J. L. & D. J. Riker, 78, Suffolk-street, for electro-magnetic apparatus. (Silver medal before awarded.) Diploma.

Benjamin Pike, Jr., 294 Broadway, for electro-magnetic apparatus. (Silver medal before awarded.) Diploma.

Samuel B. Smith, 293 Broadway, for electro-magnetic apparatus. (Silver medal before awarded.) Diploma.

John Roach, 82 Nassau-street, for an electro-magnetic machine. Diploma.

Benjamin Pike, Jr., 294 Broadway for an air pump. Silver Medal.

E. W. Ellsworth, East Windsor Hill, Con., for a delineator, an instrument of great excellence. Gold Medal.

John Tagliabue, 240 Water-street, for barometers. (Silver medal before awarded.) Diploma.

Gregg & Rupp, for nautical and surveying instruments. Silver medal.

M. Collins, Boston, Mass., for ventilators. Diploma.

William Jones, 303 Spring-street, for ingenuity exhibited in the structure of a globular universal sun dial. Diploma.

Henry Fitz, 237 Fifth-street, for further improvements in telescopes. Gold Medal.

W. H. Perry, 82 Canal-street, for an improvement in the instrument for sweeping circles. Silver medal.

Minors' Work.

Arthur Francis, 183 Broadway, for drawing instruments. \$5 and a Certificate.

METALLIC BEDSTEADS AND TABLES.

John Johnson, 115 East-Broadway, for the best brass bedstead. Silver medal.

J. B. & W. W. Cornell, 143 Centre-street, for the best wrought iron bedstead. Silver medal.

G. W. Stilwell. Brooklyn, L. I., for the best cast iron bedstead. Silver medal.

G. R. Jackson, 3 Howard-street, for the second best cast iron bedstead. Diploma.

Bachelor & Bensel, 101 Reade-street, for beautiful cast iron enamelled tables. Silver medal.

NAVAL ARCHITECTURE.

J. W. Griffiths, 616 Fourth-street, for the best model of ocean steamers. Silver medal.

Henry Owens, 158 Lewis-street, for the second best model of ocean steamers. Diploma.

Smith & Dimon, N. Y., for the best model clipper ship. Silver medal.

George Bell, 46 Avenue D, for the second best model of a clipper ship. Diploma.

J. P. Wykoff, 304 Fourth-street, for the best model of a yacht, superior workmanship. Silver medal.

H. Stanton, U. S. Army, for an excellent wooden life boat, with india rubber buoys to the outside as well as inside. Gold medal.

Joseph Francis, Novelty Works, for the best model of a metallic life boat. (Gold medal before awarded.) Diploma.

D. D. Badger & Co. Duane-street, for the best ship steerer, Reed's patent, (an improvement on that for which a Gold medal was awarded last year.) Diploma.

Joseph E. Andrews, Boston, Mass., for the best steamboat steering apparatus. Silver medal.

Joseph E. Andrews, Boston, Mass., for a model of a windlass, of very superior workmanship. Silver medal.

George Talcott, Oswego, N. Y., for a ship's capstan. Diploma.

Isaac Wilkins, 5 Attorney-street, for the best model of a row boat. Diploma.

John G. Hall, 176 Lewis-street, for an improvement in boat tillers. Diploma.

NEEDLE-WORK, EMBROIDERY AND FANCY ARTICLES.

Mrs. E. C. Beman, 129 Nassau-street, for the best ironing of shirts. Diploma.

Miss E. M. Beman, 129 Nassau-street, for the best stitched bosoms. Diploma.

Miss E. Lonergan, 295 Greenwich-street, for the best worsted caps. Diploma.

J. J. Messerve, 243½ Greenwich-street, for the best artificial flowers. Diploma.

M. B. D. Ackerman, 42 Canal-street, for the second best artificial flowers. Diploma.

D. W. Canfield, 2½ Maiden Lane, for the best ready-made linen. Silver medal.

G. A. Trowbridge & Co., 49 William-street, for the second best ready-made linen. Diploma.

Miss L. Sleight, Fishkill, N. Y., for the best pair of hose. Diploma.

Miss Agnes W. Thomson, 163 Walker-street, for the best silk chair covers. Diploma.

Miss Delia S. Storrs, Mansfield, Conn., for the best pair of silk stockings. Diploma.

Miss N. C. Young, Newark, N. J., for the second best knit stockings. Diploma.

Miss A. Sleight, Fishkill, N. Y., for the best worked cape. Diploma.

F. S. Jonson, New-York, for the best ornamental hair work. Diploma.

Mrs. H. A. Biggs, 2 Hamersley-street, for the best bead bag. Diploma.

Mrs. Lewers, 248 Grand-street, for the best wax flowers. Diploma.

Miss H. Hoyt, 117 Hester-street, for the best embroidery. Diploma.

Mrs. C. Nichols, New-York, for the second best embroidery. Diploma.

Don Jose Ma. de La Torre, 14 Beekman-street, for the best worked handkerchief. Diploma.

J. A. Oliver, 246 Grand-street, for the best children's bonnets. Diploma.

C. J. Montgomery, 412 Pearl-street, for the second best infants' bonnets. Diploma.

Mrs. L. J. Hazlet, 15 Waverly Place, for the best wax work. Diploma.

Mrs. Frazer, New-Jersey, for very excellent wax fruit. Diploma.

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H

Mrs. A. H. Marcy, 214 Bowery, for the best silk millinery.
Diploma.

The Misses Daumont, 13 Roosevelt-street, for the best jewelry hair work. Diploma.

J. McGowan, 559 Pearl-street, for best jewelry hair work.
Diploma.

Wm. Hedges, 297 Hudson-street, for superior ladies' riding gloves.
Diploma.

W. J. Ross & Co., Thirtieth-street, for best cleaned ladies' gloves.
Diploma.

Mrs. J. Salter, 21 First Avenue, for beautiful embroidery.
Diploma.

Madam Berchard, 425 Pearl-street, for an embroidered stand cover.
Diploma.

Mrs. A. Burnton, 241 Hester-street, for the best fancy baskets.
Diploma.

Miss M. J. Robinson, Newark, N. J., for the best raised worsted work. Silver medal.

Miss Mary A. Watson, East Windsor, Conn., for embroidered chair seats, feather brushes and fans. Diploma.

Mrs. Frazer, N. J., for best tapestry work. Diploma.

Miss E. Hedges, East Hampton, L. I., for the second best knit hose. Diploma.

Mrs. Mary Strangman, 81 Henry-street, Brooklyn, L. I., for the best shell work. Diploma.

Mrs. L. Cronin, 75 Thompson-street, for the second best shell work. Diploma.

M. J. Drummond, 309 Grand-street, for the best regalia.
Diploma.

E. Combs, 250 Grand-street, for the second best regalia and jewels. Diploma.

Mrs. Mary Strangman, 81 Henry-street, Brooklyn, L. I., for the best worsted worked chairs. Silver medal.

Mrs. B. R. Voorhees, Montgomery Co., N. Y., for a display of domestic manufactures. Silver medal.

Mesdames Palmer & Farr, 476 Broadway, for superior shirts and a dressing gown. Diploma.

QUILTS.

Samuel Reynolds, Somerset Co., N. J., for the best woollen spread.
Diploma.

Miss Elizabeth Wilson, Westchester Co., N. Y., for best quilt. Diploma.

Mrs. Eliza Ticknor, Newark, N. J., for the second best quilt. Diploma.

Mrs. M. Ferguson, 5 Minetta-street, for a very good quilt. Diploma.

Mrs. S. Hallerman, 94 Tenth Avenue, for the best knit cotton quilt. Diploma.

Miss Amelia Dunlap, Twenty-Ninth-street, for the best silk quilt. Diploma.

Miss H. Hoyt, 117 Hester-street, for second best silk quilt. Diploma.

Miss Catharine C. Hibbard, New-York, for the best open net counterpane. Diploma.

Miss M. A. Simpson, 14 Vandewater-street, for the best patch-work quilt. Diploma.

PAPER HANGING AND UPHOLSTERY.

G. P. Gratacap, 31 Maiden Lane, for the best paper hanging. Diploma.

Henry C. Smith & Co., 5 Mott-street, for the second best paper hanging. Diploma.

R. H. Towner, 306 Pearl-street, for the best hair seating made by power loom. Silver medal.

Upham & Burns, Second Avenue, for the second best hair seating. Diploma.

PENMANSHIP.

Asa H. Wheeler, 251 Broadway, for the best specimens of penmanship. Diploma.

Hiram Dixon, 251 Broadway, for the best plain and ornamental off-hand penmanship. Diploma.

PERFUMERY.

H. P. & W. C. Taylor, Philadelphia, Penn., for the best transparent and fancy soaps. Silver medal.

C. F. & L. Williams, 97 Maiden Lane, for the second best transparent and fancy soaps. Diploma.

John Ash, 57 Fulton-street, for the best cologne water. Diploma.

Floyd Smith, Jr., corner of Eighth Avenue and Troy-street, for the second best cologne water. Diploma.

T. R. Anderson, 7 Liberty-street, for the best shaving cream. Diploma.

Charles H. Ring, 192 Broadway, for the second best shaving cream. Diploma.

W. H. Mallory & Co., 2 Cortlandt-street, for the best military shaving soap. Diploma.

C. Van Schoonhoven, 73 Liberty-street, for the second best military shaving soap. Diploma.

PIANO FORTES & MUSICAL INSTRUMENTS.

J. H. Schomaker & Co., Philadelphia, Penn., for the best piano forte. Gold medal.

J. H. Grovesteen, 117 Grand-street, for the second best piano forte. Silver medal.

D. J. Van Winkle, 92 West-Sixteenth-street, for a piano forte. Diploma.

William Lindeman, 139 Centre-street, for a piano forte. Diploma.

Henry Ackerly & Co., Twenty-Seventh-street, near Ninth Avenue, for a piano forte. Diploma.

A. G. Badger, 181 Broadway, for a Boehm flute, and eight keyed flutes. (Silver medal having been before awarded.) Diploma.

Charles Kyes, 34, Hammersley-street, for the best banjo. Diploma.

J. S. Ray, 100 Second Avenue, for the second best banjo. Diploma.

PLATING.

John M. S. Smith, 146 Wooster-street, for the best silver plating. Silver medal.

Coombs & Anderton, 83 Mercer-street, for very superior plating. Silver medal.

P. H. Jonas, 169 Fulton-street, for excellent brass plating. Diploma.

H. F. Crane, 55 Gold-street, for good specimens of plated door plates. Diploma.

A. J. Anderson, 7 Liberty-street, for plated knives, spoons and forks. Diploma.

PREPARATIONS OF NATURAL HISTORY.

James S. Haring, 289 Broadway, for a good specimen of stuffed birds. Diploma.

Miss E. M. French, New-London, Conn., for a beautiful specimen of sea mosses. Diploma.

REGATTA.

M. K. Finlay, Edward Coady, Charles Thomas, F. D. Bigelow, James Coady, for the best rowing in four oared boat "George Washington." Silver cup.

William Kennedy & William McDonough, for the best rowing with two pair of sculls, in boat "White Hall." Silver cup.

Charles Thomas, 15 Washington-street, for the best rowing with 1 pair of sculls in a 19 foot boat, "Flower." Silver medal.

James Lee, 15 Washington-street, for skill in sailing the boat "Oregon," without oar or rudder. Silver medal.

SADDLERY, HARNESS AND TRUNKS.

H. S. Woodruff, 158 Broadway, for the best trunk. Silver medal.

James Hamilton, 2½ Cortlandt-street, for the second best trunk. Diploma.

Ryerson & Dunscomb, 279 Bowery, for a superior set of single harness. Gold medal,

S. I. Pymm, 256 Third Avenue, for a superior set of cart harness. Silver medal.

John Dawson, 35 Willett-street, for a superior set of cart harness. Diploma.

Thomas Fitzharris, 49 Atlantic street, Brooklyn. L. I., for a lady's saddle. Silver medal.

John Wilson, 135 Bowery, for the best fireman's caps. Diploma.

SIGN PAINTING, GRAINING, AND IMITATIONS.

Erasmus B. Derby, 56 Ann-street, for superior signs. Diploma.

B. F. Pinkey, 168 Orchard-street, for a well painted sign. Diploma.

D. C. Vaughan, 156 Greenwich-street, for the best graining. Diploma.

Fish & Burton, Brooklyn, L. I., for the best imitation marble. Diploma.

Robert Graves, Brooklyn, L. I., for marbling on paper. Diploma.

Minor's Work.

J. S. Myers, Brooklyn, L. I., for an excellent fancy sign. \$7.50 and a certificate.

George Steele, 56 Ann-street, for a superior fancy sign. \$5 and a certificate.

RAW AND MANUFACTURED SILK.

Raw.

Mrs. G. Van Epps, Ovid, N. Y., for the best cocoons. Silver medal.

Miss Harriet Summy, Lancaster county, Penn., for the best bushel of cocoons. Van Schaick premium \$5, and a bronze medal.

John M. Summy, Lancaster county, Penn., for the best 20 pounds of raw silk, sample of 100 lbs. Van Schaick premium \$10, and a bronze medal.

Abraham Swift, Dutchess county, N. Y., for the second best raw silk. Diploma.

Manufactured.

S. O. Loomis, Windsor, Conn., for the best sewing silk. Silver medal.

Atwood & Russ, Mansfield, Conn., for the second best sewing silk. Diploma.

Thomas Ryle, Paterson, N. J., for specimens of sewing silk on spools. Diploma.

Miss Harriet Summy, Lancaster county, Penn., for superior specimens of sewing silk. Diploma.

New-York Dyeing and Printing Establishment, 45 John-street, for the best silk twist. Silver medal.

Court & Deschaux, 579 Greenwich-street, for the best silk dyeing. Silver medal.

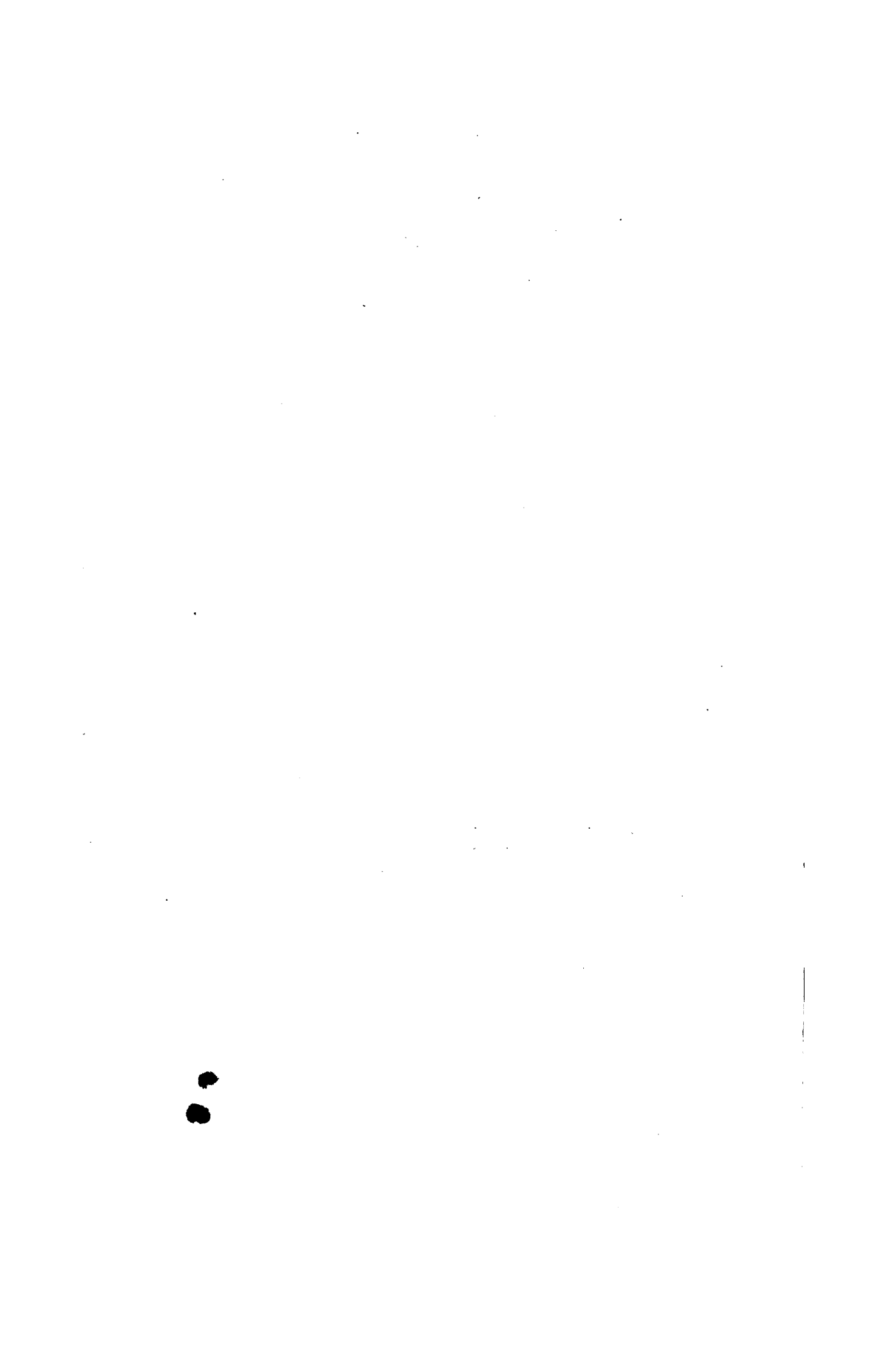
James Millward, Thirty-First and Eighth Avenue, for a piece of satin. (Silver medal having before been awarded.) Diploma.

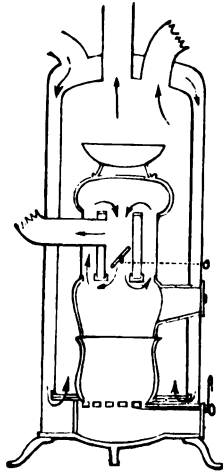
SILVER WARE.

Ball, Tompkins & Black, 247 Broadway, for the best tea and dinner services, and a pair of antique pitchers. Gold medal.

Eoff & Phyfe, 5 Dey-street, for a silver pitcher. Silver medal.

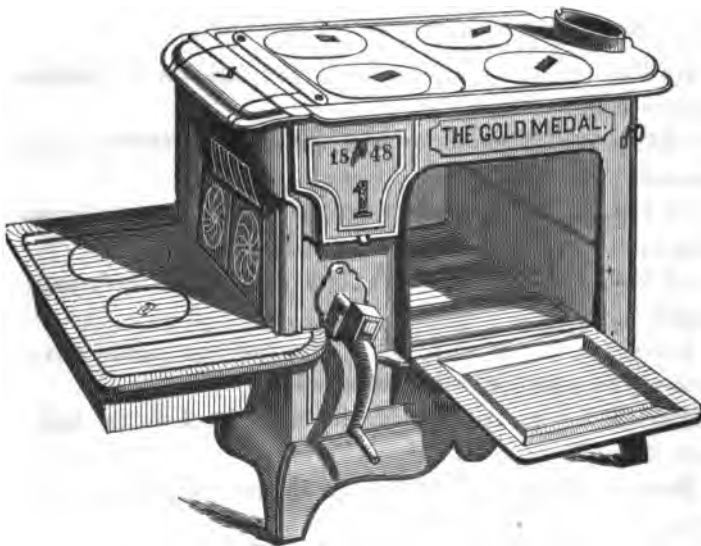
Albert Coles, 6 Little Green-street, for silver knives and forks. (Silver medal having before been awarded.) Diploma.





CULVER'S PORTABLE HOT AIR FURNACE.

A No 1 Portable Furnace with a central outline, with two metal coverings, with the inlets and outlets of cold and hot air, smoke pipe, &c., with evaporating pan standing upon the top of the drum. This Portable is a good substitute for a Hall stove, having power not only to warm the Hall, but by means of pipes may convey warmth to other apartments.



MOTT'S COOKING STOVE, WITH TUBULAR OVEN.

Miners' Work:

O. J. Olmstead, 102 Reade-street, for the best silver cups. \$10 and a certificate.

C. Miller, 102 Reade-street, for the second best silver cups. \$5 and a certificate.

D. B. Olmstead, 102 Reade-street, for a fair specimen of chasing. \$5 and a certificate.

STOVES, RANGES AND HEATING APPARATUS:

Cooking Stoves and Ranges.

Jordan L. Mott, 264 Water-street, for the best cooking stove with tubular oven, an improvement in the coal grate. Silver medal.

Wands & Tremere, for a cooking stove, with a broiling apparatus attached. Silver medal.

Callanan & Wilson, Albany, N. Y., for a Columbian air-tight cooking stove. Silver medal.

David Morgan, Beekman-street, for Mc-Gregor's ventilating cooking stove. Diploma.

B. P. Learned & Co., Albany, N. Y., for a cooking stove, "Capitol." Diploma.

Stoves for warming, and Hot Air Furnaces.

Ebenezer Barrows 288 Water-street, for the best hot air furnace for anthracite coal. Gold medal.

Culver & Co., 52 Cliff-street, for the second best hot air furnace for anthracite coal. Silver medal.

Culver & Co., 52 Cliff-street, for a hot air furnace for bituminous coal. Diploma.

Culver & Co., 52 Cliff-street, for the best portable hot air furnace. Silver medal.

B. P. Learned & Co., Albany, N. Y., for the best parlor stove, "Chandelier," for wood or coal. Gold medal.

John Morrison & Son, Troy, N. Y., for the best stove for halls, steamboats, &c. Silver medal.

Viall, House & Mann, Troy, N. Y., for the second best stove for halls and steamboats. Diploma.

Jordan L. Mott, 264 Water-street, for the best wood stove, designed for schools, churches, &c. Gold medal.

Fiske & Raymond, 209 Water-street, for the best air tight stove. Silver medal.

Tuttle & Bailey, 210 Water-street, for the best hot air and ventilating registers. Silver medal.

Culver & Co., 52 Cliff-street, for the second best hot air and ventilating registers. Diploma.

Green & Warren, Troy, N. Y., for ornaments on a cast iron stove. Diploma.

SURGICAL INSTRUMENTS.

A. Smith, 170 Broadway, for metallic supporters and trusses. Diploma.

John W. Hood, Mt. Sterling, Ky., J. M. Sanderson, agent, 5 Barclay-street, for hernial apparatus. Diploma.

J. D. Chevalier, 184 Broadway, for dental instruments. (Silver Medal before awarded.) Diploma.

B. Knight, 1 Ann-street, for a simple and useful elevating bedstead for invalids. Diploma.

TOBACCO AND ITS MANUFACTURES.

Broadwell, Beach & Co., 119 Greenwich-street, for the best segars. Diploma.

A. L. Maby, 469 Grand-street, for the second best segars. Diploma.

J. L. Hoyt, Brooklyn, L. I., for segars, the tobacco raised in Brooklyn. Diploma.

TURNUED WOOD, AND IVORY TURNING AND CARVING.

John H. Mead, 41 Hester-street, for the best wood turning and cornice moulding, as a substitute for carving. Diploma.

C. Thomas, 42 Stanton-street, for the best ivory turning. Diploma.

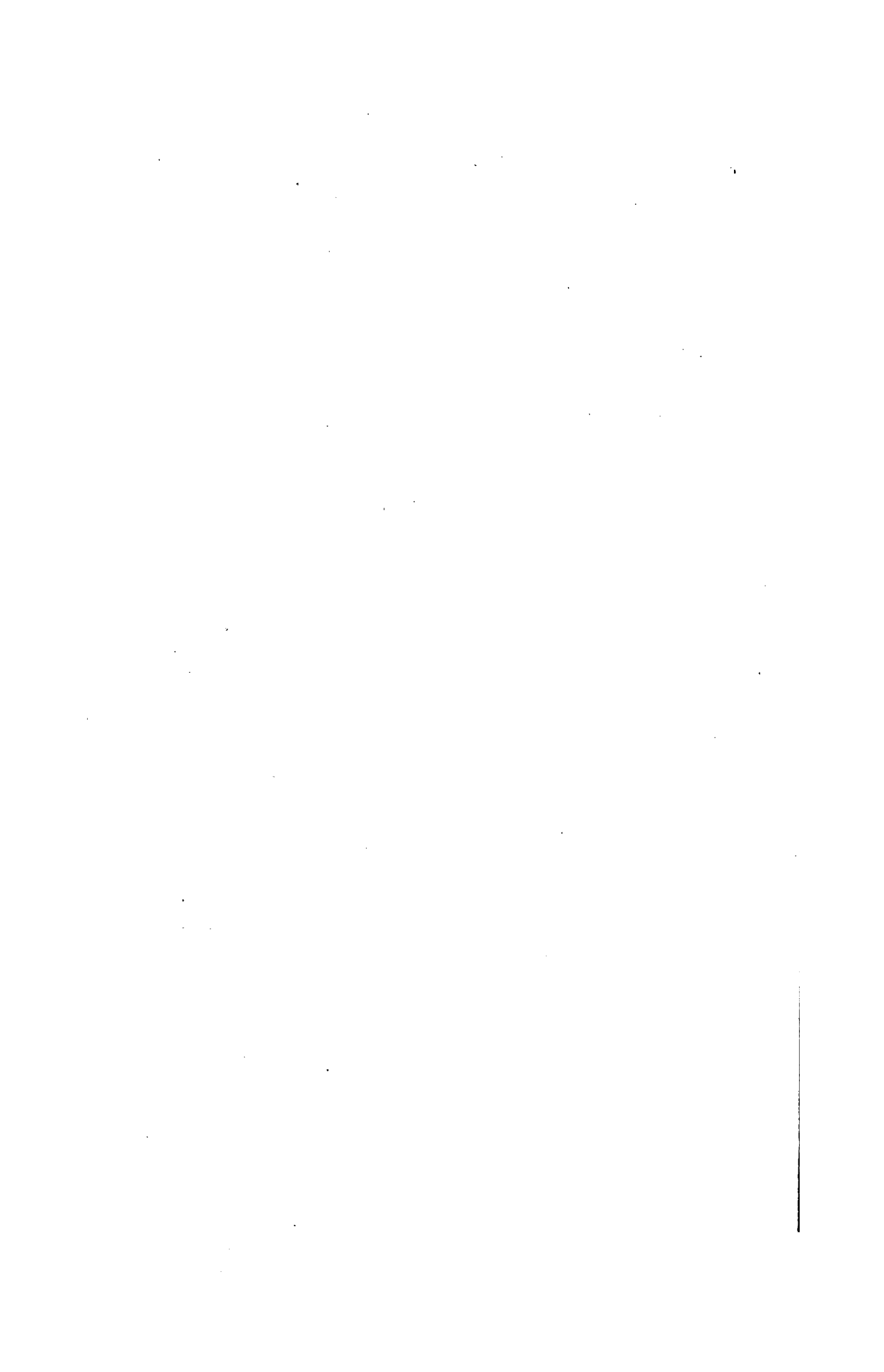
F. Wolf, 82 Fulton-street, for the best ivory carving. Diploma.

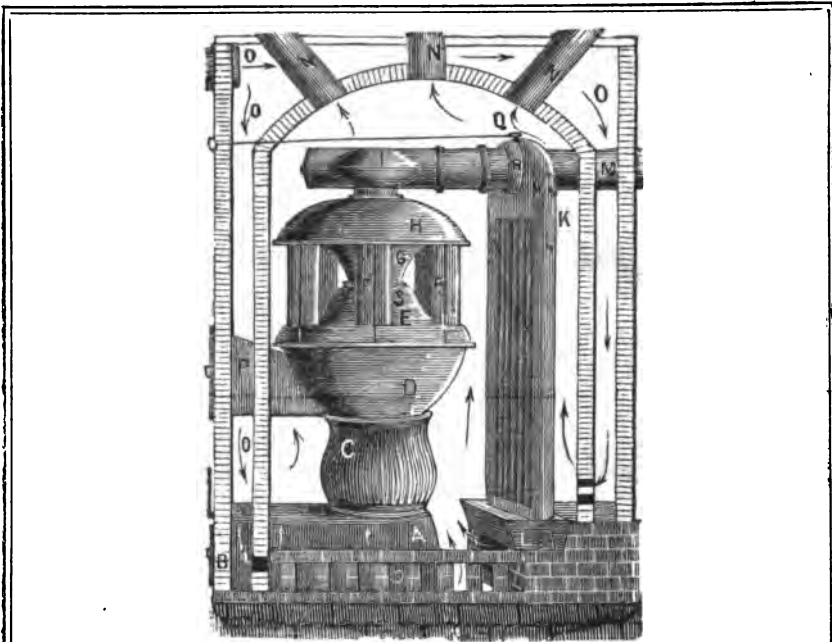
WIGS AND TOUPEES.

Bourgard & Brothers, 5 Frankfort-street, for the best ladies' and gentlemen's wigs. Silver medal.

W. Batchelor, 2 Wall-street, for the second best gentlemen's wigs and toupees. Diploma.

James Laird, 92 Chatham-street, for gentlemen's wigs. Diploma.



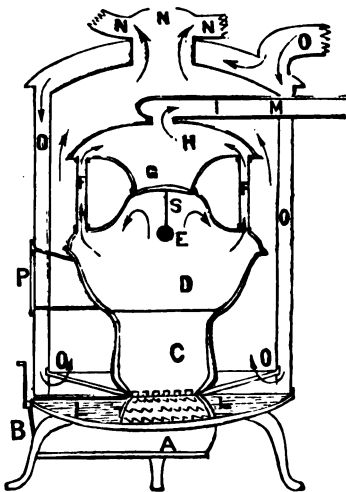


CULVER'S HOT AIR FURNACE FOR WARMING HOUSES, &c.

FIGURE 1.

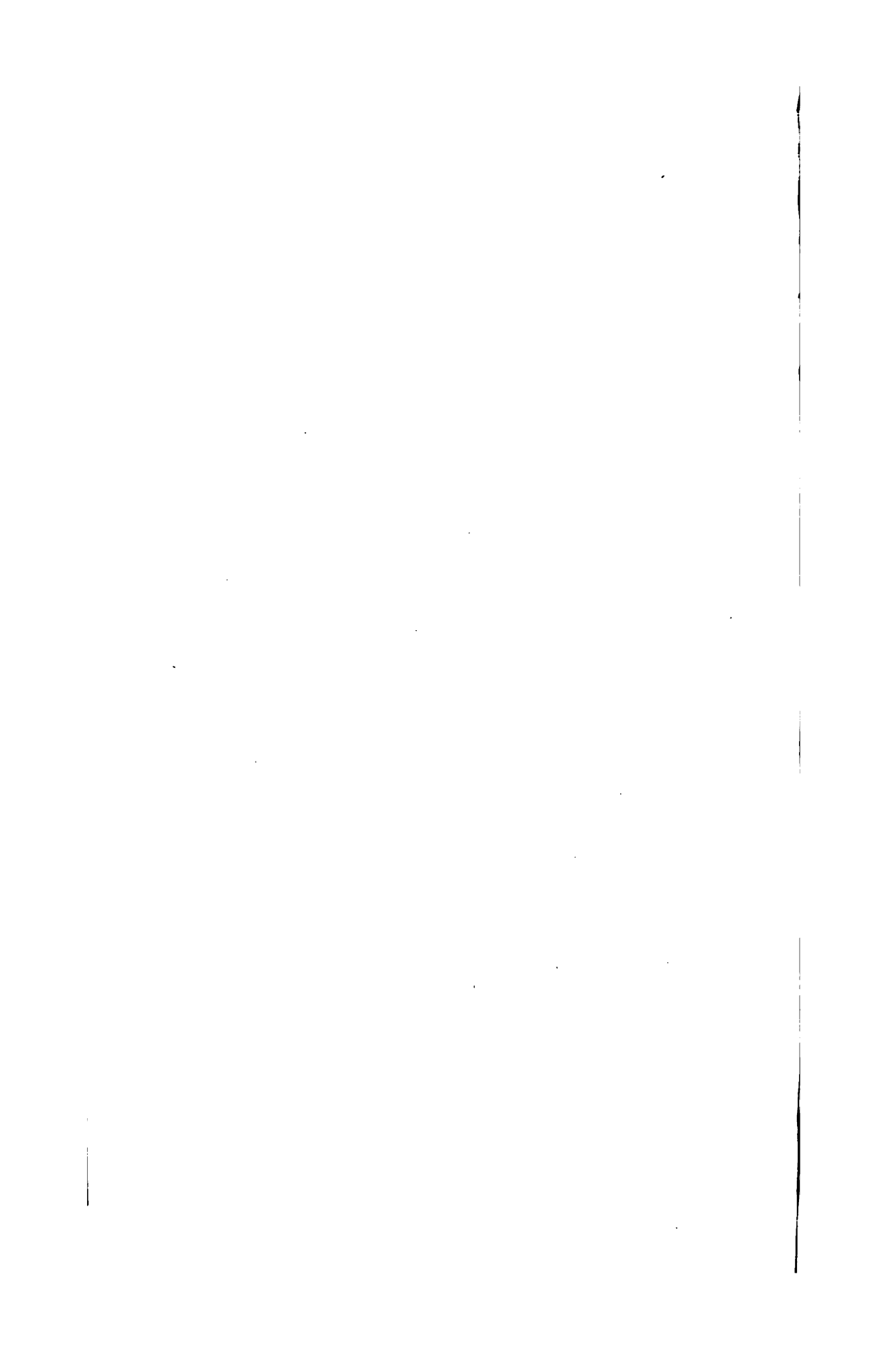
A Iron or Brick Ash Pit; B Ash Pit Door; C Pot or Coal Burner, with or without soap stone lining; D Fire chamber; E lower half of Tubular drum; F Elliptical tubes; G upper half of Tubular drum; H top of Tubular drum; I cap and smoke pipe; K flat Radiator; L water basin or evaporator; M smoke pipe to chimney; N conductors of hot air; O cold air conductor and chamber; P feed door; Q hot air chamber; R damper in globe with rod attached; S petal valve for cleaning; the arrow shows the direction of the currents of hot or cold air.

CULVER'S HOT AIR FURNACE.—CROSS SECTION.



A large size Portable Furnace is here represented in outline or skeleton form, in double castings of sheet Iron, Tin or Zinc—with same letter references as in Figure 1.

These portables may be used to warm Stores or Buildings where it is not convenient or desirable to erect brick walls, and may be placed in basements or cellars, warming the rooms in which they stand, as well as those above. They are very conveniently arranged and have sufficient power to warm a moderate sized building, and can be removed as easily as a common stove.



WOOLLEN GOODS.

Scofield, Capron & Co., Walden, Orange co., N. Y., Stanton, Knapp & Woodruff, agents, 43 Broad-street, for the best black cloth made from American wool. Gold medal.

Utica Globe Mills, Utica, N. Y., Lawrence, Trimble & Co., agents, 35 Broad-street, for the second best black broadcloth, made from American wool. Silver cup.

Scofield, Capron & Co., Walden, Orange co., N. Y., Stanton, Knapp & Woodruff, agents, 43 Broad-street, for superior black broadcloth, made from foreign wool. Diploma.

Burlington Mills, Burlington, Vt., Horace Waldo, agent 29 Pine-street, for the best black cassimeres, made from American wool. Gold medal.

Seneca Woollen Mills, Seneca Falls, N. Y., Fisher, Howe & Hamilton, agents, for the second best black cassimeres, made from American wool. Silver medal.

Middlesex Woollen Mills, Lowell, Mass., Walcott & Slade, agents, 13 Broad-street, for the best black cassimeres, made from foreign wool. Diploma.

New England Co., Rockville, Conn., Thomas & Dale, agents, 53 Exchange Place, for the best fancy cassimeres. Gold medal.

Platner & Smith, Lee, Mass., Lord & Snelling, agents, 42 Exchange Place, for the second best fancy cassimeres. Silver medal.

Middlesex Woollen Mills, Lowell, Mass., Walcott & Slade, agents, 13 Broad-street, for mixed cassimeres, made from American wool. Diploma.

Middlesex Woollen Mills, Lowell, Mass., Walcott & Slade, agents, 13 Broad-street, for mixed doe skins. Diploma.

Gilbert & Stevens, Ware, Mass., Thomas & Dale, agents, 53 Exchange Place, for white flannel. Silver medal.

MISCELLANEOUS.

B. J. Williams, Philadelphia, Penn., for fancy narrow slat Venetian window blinds. Silver medal.

Lee & Co., 309 Bleeker-street, for the best gauze wire shades and dentist signs. (Silver medal before awarded.) Diploma.

J. Rossiter, 556 Grand-street, for the second best wire window shades. Diploma.

H. Goulet, 66 John Street, for painted blinds on perforated zinc. Diploma.

W. E. Rose, 300 Broadway, for gold and silver mounted canes. Silver medal.

H. R. Holland, for canes and cane tops. Diploma.

L. Cantel, 15 West Broadway, for a good hat case. Diploma.

J. Spencer, 39 Division-street, for hat frames. Diploma.

S. M. Coffert, 119 Walker-street, for daguerreotype frames. Diploma.

W. H. Tracy, 118 Grand-street, for a gilt and ornamental picture frame. Diploma.

John Bruce, 24 Platt-street, for steel and copper plates. Silver medal.

Charles D. Mead, 7 Suffolk-street for glass door plates and numbers. Diploma.

Clark & Tobin, Newark, N. J., for ivory fixtures and elastic speaking trumpets for carriages. Diploma.

Bracklin & Slitt, 23 New-street, for good speaking trumpets. Diploma.

Francis Byles, 44 Avenue D, for durable market baskets. Diploma.

Andrew Blackwood, 104 Laurens-street, for a quilting frame. Diploma.

P. H. Stout, corner of Murray-street and Broadway, for water proof razor strops. Silver medal.

B. P. & W. T. Crandall & Co., 337 Stanton-street, for hobby horse and propeller. Diploma.

E. Godfrey & Son, 299 Pearl-street, for a boot stretcher. Diploma.

J. N. Cooper, Twenty-Eighth-street, corner of third Avenue, for natural specimens of anatomy and horse shoeing. Diploma.

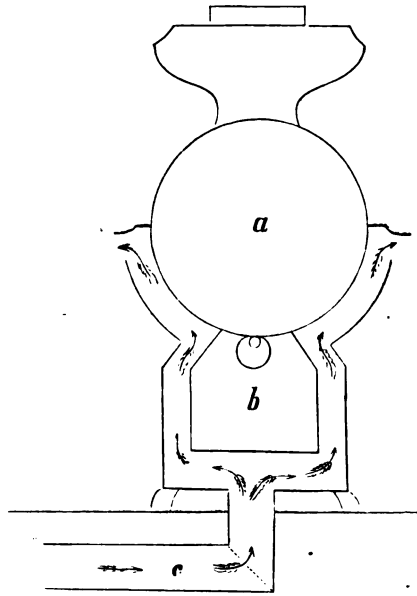
Wm. D. Smith & Son, 1 Ann-street, for prepared oil stone. Silver medal.

Wm. Marlow, Williamsburgh, L. I., for zinc and tin water-leaders and eave-gutters. Diploma.

Wm. Marlow, Williamsburgh, L. I., for superior sheet iron kettles. Silver medal.

Minors' Work.

J. Conely, 29 Chambers-street, for an ornamental picture frame. \$3 and a Certificate.

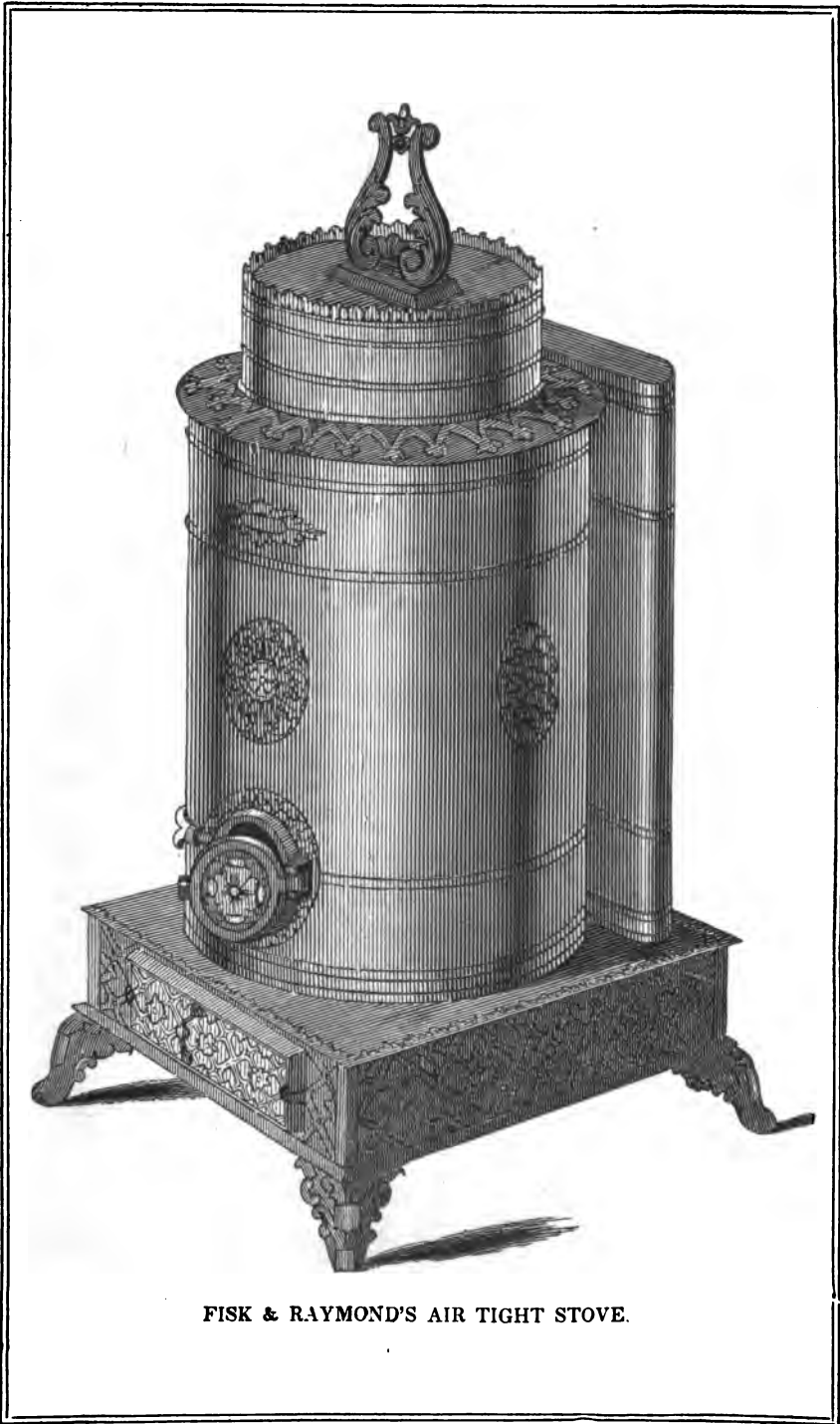


MOTT'S STOVE FOR SCHOOLS AND CHURCHES.—CROSS SECTION.

D—Fire Chamber; C—Pipe, to admit pure air from without the building in which the Stove is placed. The arrow denotes the course of the air for ventilation and warming.



MOTT'S STOVE FOR SCHOOLS AND CHURCHES.



FISK & RAYMOND'S AIR TIGHT STOVE.



EXTRACTS

FROM

STATEMENTS OF EXHIBITORS.

JOHN HOLBERT'S DAIRY.

My farm and butter dairy is located in Chemung Co. adjoining the Pennsylvania State line, is elevated about eight hundred feet, above tide water, at 42° north latitude. My farm contains 200 acres of land which is worked or farmed the past season as follows: I keep and milk 40 cows, and my grain, grass and meadows are as follows:

	acres.
Wheat,	24
Oats,.....	8
Corn and Potatoes,	20
Summer fallow,	2
Meadow.....	40
Pasture,	74
Wood and waste land,.....	22
Buckwheat,	10
	<hr/>
	200
	<hr/>

The soil is a gravelly loam, subsoil the same. I use no plants or slops for my cows; all I give them is hay, grass and corn-stalks. I think corn-stalks preferable to any other fodder for milch cows. My pastures are clover and timothy, and my meadows the same. I sow plaster (Cayuga) every spring on all my pastures and meadows; I

change pastures, often, and would recommend changing twice a week. I have tried several experiments in my dairy the past season, among which are the following, commenced making butter about the first of April, and up to the 4th of May, I made 512 pounds of butter. May 5th commenced packing for the fall market. Made in May, 26 days 747 pounds : in June 30 days 1186 pounds : in July, 31 days 1079 pounds : in August 31 days 1016 pounds, and from September 1, up to December 15 three and a half months, which is about the close of the season for making butter in this vicinity, 1948 pounds.

I drew the milk from five cows for 30 days in succession ; commencing with the 28th of May, with the following result, viz : I made 248 pounds of butter in 30 days from five cows.

On the 11 of June I drew from five cows 187 pounds of milk which made when churned $8\frac{1}{2}$ pounds of butter. June 15th drew the milk from 37 cows, morning mess, 525 pounds, evening mess, 632 lbs in all, 1157 pounds of milk and measured 136 gallons, and when churned made 43 pounds of butter, making 3 lbs, $11\frac{1}{2}$ oz of butter to the hundred pounds of milk.

My cows are generally the common breed ; I have few that have a slight mixture of Durham blood in them ; I keep swine to consume the buttermilk ; I do not raise all of my calves, but always save a few of the finest, this year I have raised six ; I use the Turks Island salt, of the Ashton sacks and no other ; I find that 100 pounds of milk drawn from my best cows, that is, those that give the richest milk, will make one pound more butter than one hundred pounds of milk drawn from the whole herd ; There is more difference in the quality than in the quantity of milk for making butter, dairyman therefore would do well to look to the quality more than to the quantity of milk each cow gives ; I find by churning the milk of each cow separately, that one of my best cows will make as much butter as three of my poorest giving the same quantity of milk ; I have kept a dairy for more than 20 years, but I never knew until the past season that there was so much difference in cows.

I am inclined to the opinion that too many dairymen overstock their farms, as one cow well kept is worth, for dairy purposes, two cows poorly kept, and then they keep their pastures too short, which injures the land, as land left in the fall with a heavy coat of grass, will produce pasture earlier in the spring and will stand a drouth the next season much better than those pastured short.

I keep a large watering trough in my cow yard, where I very frequently observe cows drinking large quantities of water immediately after coming from the brook. I keep salt lying in the yard the year round. Too much care cannot be taken by dairymen to observe the time of churning. I usually churn from one hour to an hour and a half. I put from one to two pails of cold water in each churn before commencing to churn, and one pail more in each when nearly done, in order to thin the milk and make it produce all the butter it contains. Then take the butter out, wash it through one water, then set it in the cellar and salt it; then work it from three to five times before packing. I always work my butter by hand, always packing the first day if the weather is cool; but if warm, the second day. In churning, if the milk is too warm, the quantity of butter will be less, and the flavor bad. In packing, I fill my firkins to within two inches of the top, then cover it with a linen cloth and fill the firkin with salt, and see that the salt is kept moist through the season. Great care should be taken not to let the milk stand too long before churning, as in case it stands too long in hot weather, it becomes too sour, and in cool weather bitter, all of which can be prevented in cool weather by putting about one quart of buttermilk in each tub or pan before straining the milk, and in hot weather, by churning as soon as the milk becomes thick and moist on the top of the cream.

I sold the products of my last year's dairy, to Messrs. C. Adams & Co., No. 244 Fulton-street, New-York, for 24 cts per pound. I am told by them that it was sent South, and stood the climate well. I sold my this year's dairy to Mr. R. Clearwater, at No. 185 Washington-street, New-York, for 23 cts. per pound.

JOHN HOLBERT.

Chemung, Chemung County, N. Y., December 31, 1848.

MARTIN L. THOMPSON'S MODE OF MAKING BUTTER.

The quantity of butter I made from 15 cows, during the last year, was 2,450 pounds, which averaged me $24\frac{1}{2}$ cts. per pound, amounting to \$594,12 $\frac{1}{2}$. My system of making butter differs but little from the mode pursued by the great mass of butter makers. I place my vessel for holding milk, about four inches from the bottom of the cellar, the place where I strain my milk being of a brick bottom, where

it remains until mature for churning. When thrown together in a barrel and a quarter churn, with little or no bilge, cream and milk em-masse, then propelled by a double wheeled machine with pretty good speed, until fit for removing from the churn. I wash my butter in two waters before salting, and once after, and when properly worked lay it down in a tub, returnable, holding about 60 pounds. I then ship them to the metropolis, where it brings me from 20 cts. to 2s 6d per pound. I stable my cows during the winter season without feed, except hay, my hay being of a good quality. The remainder of the season my cows feed upon meadow bottom, natural grass, which grows spontaneously.

The above is a correct statement of my proceedings and management.

MARTIN L. THOMPSON

Goshen, January 24, 1849.

HENRY ROBINSON'S MODE OF MAKING BUTTER.

My mode of making butter is similar to that practiced in Orange county, that is, the milk and cream are churned together. When the butter is taken from the churn it is washed in cold water, after which it is salted and allowed to remain in that state some three or four hours. It is then thoroughly worked and allowed to remain until the next day, when it is again worked and packed for market. It appears that the great art in butter making, is in working the butter, allowing the pasture to be equally as good, and those who can hit on the proper medium, not working the butter too much or too less, excel.

We milk thirty-six cows, and although the last season was a dry one, made 4,600 pounds of butter, which was sold in the New-York market from 19 to 25 cents a pound, averaging 21½ cents. Our pastures are principally upland meadows, and well watered; the sward is generally broken up every four or five years.

HENRY ROBINSON.

Newburgh, Jan. 1, 1849.

BREWSTER HELMS' MODE OF KEEPING COWS AND MAKING BUTTER.

We have kept during the past season an average of 13 cows, from which have been made 2428 pounds of butter, being 186 pounds to the cow. The cows have had no feed, except a short time in the spring. The pasture principally low land, except some clover in the early part of the season. The milk was churned, after getting sour, with a horse machine, taken out, rinsed twice in cold well water, and salted. It then stands in the open tray until the following day, when it is worked over and packed away. The time allowed for milk to get sour, varies according to the weather from two to three days.

The pail sent to the fair had no extra pains taken with it whatever.

BREWSTER HELMS.

Walkill, December 20, 1848.

HYSLOP AND COFFIN'S CHEESE DAIRY.

In reply to the questions contained in your circular of the 1st ult., we have to say that the cheese exhibited by us at the late fair of the American Institute, was from a dairy of 250 cheeses, weighing about 4000 pounds, and made from the milk of 18 cows, employing the labor of four persons most of the time for about four months, the time consumed in making the cheese. The mode of making is very similar to that of the celebrated Cheshire cheese of England, of which you are already informed. The average price is about 12 cts. per pound. The great advantage gained in the making of this description of cheese is in its being well adapted for the southern and tropical climates, large quantities being shipped annually to the southern states, East Indies, Sandwich Islands, &c., neither is it so liable to spoil in our own climate as the cheese generally known as the Herkimer county.

It may be proper to add that the cheese exhibited by us was about 15 months old, and a very fair sample of the entire dairy.

Respectfully yours,

HYSLOP & COFFIN.

New-York, 5th Feb., 1849.

A. E. AUSTIN'S MANNER OF MAKING CHEESE.

I have kept sixty cows; they are stabled in the winter and fed abundantly on hay until about the middle of March. I then feed them with grain, consisting of corn ground in the ear, shorts, oats ground, and oil meal, all mixed together. This feed is continued until they come in or calve; they are then fed with whey mixed with the meal, principally shorts through the summer, and continued until say the middle of December, fed twice a day, and about two quarts at a time, of meal, and six quarts of whey.

My cheese I make as follows: The night's milk is put into a tin vat, the tin vat sets in a wooden one large enough to contain water and ice sufficient to keep the milk cool until morning; it is then heated by means of steam conducted from a kettle (set in an arch,) by a tube in the water. The rennet is put into the milk at the temperature of 88°, is curdled in thirty minutes, worked slow at first, and then more rapid; the curd is broke up fine and cooked to the temperature of 98° or 100°, until it is of a consistency or apparent dryness to salt. It is then put into a cooler or sink, 7 feet by 3½, and salted, care being taken to keep it fine, it is then put into the press quite cool and pressed, the harder the better. I make about five hundred pounds per cow, or fifteen tons the season. The two last seasons an increase of two hundred per cow over what I have made usually, owing in part to extra feed, and in fact to a better selection of cows.

AARON E. AUSTIN.

Austinsburgh, Ohio, March 13, 1849.

ALEXANDER OSBORN'S METHOD OF MAKING CHEESE.

The farm contains 175 acres improved land, of which 14 acres are ploughed land, 50 acres meadows, and the balance pasturage. This season, there has been kept on the farm 38 cows. Commenced making cheese the 20th of April, and from what has been made, he estimates the quantity this season to be about 21,000 lbs., making suitable allowance for shrinkage of cows, &c.

The cows are fed, when the pasture is short, with whey and shorts once a day. The expense for extra feed this season, will be about twenty dollars. After milking the cows, let the milk cool to about the temperature of 80°, and then put in the rennet. Let it stand three-fourths of an hour, and then break up the curd. After about three-fourths of an hour longer, cook it gradually to the temperature of 90°, stirring it slowly at the same time, then drawing off the whey stir it until quite dry and cool. After a few minutes salt it, using about a teaspoonful of evaporated salt, ground fine, to about 15 lbs. of curd, and let it stand until quite cool. At about 12 M., put it in press under sufficient weight to press out all the whey as soon as possible. About 4 P. M., the same day, turn the cheese, put it in the press and turn it again the next morning. Next evening take it out and cap it, put it again in the press until next morning; afterwards put it in the cheese room until quite dry, which will take about two days, then rub it well with hot butter, made by churning the whey.

Morgan, Ashtabula County, Ohio.

HENRY ROBINSON'S METHOD OF RAISING WHEAT.

In reply to the interrogating circular of the Institute, relating to my manner of raising wheat, I beg leave to state that I raised 84 bushels off of two acres, one acre of which had had corn on it, the other acre, one half had been planted with potatoes, the other half was an old sward, the soil a sandy loam. The crops were taken off early, and the wheat sown the beginning of September. The manure applied was a compost of stable and street, offals, &c. 50 bushels of leached ashes, 50 of quick lime, slacked upon the compost heap and mixed with the compost as the heap was taken away. The result was as follows :

50 loads of manure at 37½ cts.,.....	18 75
50 bushels quick lime at 21 cts.,.....	10 50
50 leached ashes at 10 cts.,.....	5 00
Expenses putting in crop,	11 50
“ harvesting, &c.,.....	12 25
Gain,.....	66 48
	<hr/>
	\$124 48
	<hr/>

84 bushels of wheat sold for seed, weight 63 lbs.
 per bushel, $88\frac{1}{4}$ at \$1,40..... \$124 48

It is worthy of remark, that the half acre of sod ground produced the best wheat. It was plowed but once; the furrow was 9 inches deep and 17 wide, completely inverted, and a heavy roller passed twice over it, and the manure applied as a top dressing, well harrowed in.

The bushel of wheat exhibited at the Fair of the American Institute, was from the sward, and weighed 64 lbs.

HENRY ROBINSON.

Newburgh, N. Y., Jan. 8, 1849.

GEORGE NESBITT, MODE OF RAISING OATS AND PEAS.

The Poland oats I raised and presented for premium, was grown on land that produced a crop of peas the season previous. The land had never been manured; was plowed once in the spring previous to sowing, and sown at the rate of three bushels per acre.

I have been careless in keeping a memorandum of the labor expended in raising the crop, and cannot fairly give a technical account of the profits of the crop, but the following may be relied on as substantially correct.

I use a team of horses, and average plowing at the rate of one acre per day. I also use a triangular drag or harrow, with eleven teeth, and harrow in the seed of three acres per day, dragging in two different directions twice on a place, which amounts to dragging the ground four times over.

My farm is a gravelly loam, new, steep and uneven, and a harrow of the above description answers my purpose best. I raised at the rate of 40 bushels per acre. I sell a considerable quantity yearly to Mr. Alexander Smith, seedsman and florist, New-York, at the rate of one dollar per bushel. In harvesting the oats I cut them before fully ripe, as at that period in a storm they are apt to lodge down and shell.

The peas I raised are all of early varieties. My mode of raising peas is to select a new and fresh piece of ground, clear of weeds. Potato or corn ground answers if not highly manured the year previous to sowing. Manure has the effect of producing haulm or vines to an immoderate length, but few pods will form, and what few there are will not fill.

I plow the ground thoroughly, drag or harrow the surface smooth, and sow at the rate of four bushels per acre of the common sized early peas, if large kind and dwarf, I sow thicker and plough them under, using a shallow narrow furrow.

GEORGE NESBITT.

Hobart, Delaware county, Jan. 8, 1849.

J. N. BLAKESLEE ON DEVON CATTLE.

The manner of raising my stock of cattle, all high bred Devons, and for which I have received the first premium, has been to take them from the cows when four days old, bring them up by hand on skimmed milk until they are ten weeks old, then wean them. They are thenceforth kept on hay and grass, until they are broke for labor, which is generally when they are two years of age, at from 100 to \$125 a pair, which is an annual income from 20 to \$25, besides the profit of their labor, which is a good part of the year sufficient to pay the expense of keeping them.

Since I sold my team in New-York last fall, I have had none but two years old steers of which I have five pair, which have done all my work. I breed all my working oxen; I have not bought a pair in twenty years. I never have been in the habit of giving grain to my cattle, when I have plenty of hay. My stock is of high breed Devons, and there is, in my opinion, no breed of cattle in our country that will grow as much and as fine on short feed, as the Devons. They are sometimes under-size, but this however may be remedied by good breeding.

The day has arrived when breeders of fine stock should have great encouragement for the purity of blood, and expressly for the im-

provement made by the art of good breeding. Importation has been necessary ; but I long to see the day when we shall improve so as to be able to compete and supercede the imported. We want nothing but suitable encouragement to accomplish this object. If agricultural societies would do more for breeders, and less for speculations, the object would be much sooner accomplished.

It is very common for breeders of fine stock to commence feeding their young stock high, and if continued it will make them grow coarse, heavy horned, thick headed, and they will never have that activity and vigor of constitution so essential for good working cattle. Many of our male animals are injured by high feeding when young. In my opinion, the practice of letting calves run with the cows and have a full supply of milk, is very injurious.

I never saw a pair of steers raised in that way which ever made good working oxen. Neither did I ever see a boy indulged in idleness with plenty of money, who ever made a man of business.

J. N. BLAKESLEE.

PURE BLOOD SPANISH MERINO SHEEP.

BY J. N. BLAKESLEE.

I noticed in the circular of the American Institute, that premiums are offered for pure blood Spanish Merino sheep, and also for twenty-five fleeces or the finest and best wool for clothing. From your remarks, I take it for granted that you expect the wool to be taken from pure bloods, and that of course you will demand the pedigrees and certificates of proof in both cases.

As I am almost the only one who has preserved the pure Spanish race of sheep formerly imported, in the same purity of blood, down to the present day, I feel it a duty to step forward in competition with any other breeder of sheep of whatever kind.

I had my flock from Captain Gad Peck, of New Haven, Connecticut, in 1815. He had selected them in Spain, of the purest blood and they were pronounced so by Col. Humphrey on their arrival here.

They were of two kinds; I bred them together until 1823. I then obtained a buck sired by an Esturial buck, out of a ewe imported by Col. Humphies from Estremadura, near the borders of Portugal, and known as Estramadura sheep. I improved that buck for three seasons. In 1828 I obtained another of the same blood, which I improved for two seasons. From that time to the present, I have bred from my own flock, for the reason that I can find nothing that is pure Spanish that I can improve upon. I do not say there are no sheep as fine as mine. I believe that those of France and Germany were all derived from Spain, but it may be questioned whether they have been kept in a pure state. I refer to the letter of Mr. Groves to Mr. Colman, giving a history of the importations of sheep from Saxony into the United States. He says the first was in 1824; he brought with him about 225 of both kinds. In 1825 about as many more were imported; some of them, he says, sold very high, viz: \$400 to \$450. This created speculation! In 1826 *twenty-five hundred* were imported into Boston and New-York, many of them pure Electoral sheep; but some whole cargoes of them were sold as pure Electoral that were cross bloods, down to three-fourth bloods.

If this be true, how can any one tell who has the pure bloods; whether a cross with the native sheep of Saxony, or injured by breeding, is more than I can learn. It is evident that there is a serious defect, because wherever there has been a cross of the pure Spanish merino with the Saxon, they have been improved both in quantity and quality. This is proof that the Spanish sheep is more pure than the Saxon; and if we are to improve in this country, it must be by *purity on impurity*, for it never can be by the reverse! This I will attempt to prove as the result of actual experiment. You speak in your circular of wool best fitted for clothing! that is a very important question to be considered! whether a *little one pound fleece*, taken from a sickly, puny sheep of the finest fibre that can be produced, is preferable to the next quality in its pure and healthy state, in full possession of its felting properties. I have always understood from manufacturers, that they never get much profit from the finest quality, but from the next they make their profit; and it is very certain that the wool grower gets more profit from a *three pound fleece* than *one*. The next question is, which makes the most desirable goods for the consumer? I think that wool from the healthy, pure blood sheep, with its native oil at the out end, sufficient to preserve the life of the wool, entirely

free from dirt, in full possession of its felting properties, gives a more permanent body, and a better finish to cloth, than any wool which can be produced. However, I do not expect to compete, as to fineness, with those who have selected their flocks from different parts of the United States, and where there can be no certainty as to the purity of the blood.

Is there, then, any credit to be given to those who preserve the pure original blood as it came direct from the northern country, or shall all the credit be given to persons who speculate in the matter, collecting their flocks from different parts of the United States.

In order to show the benefit of using pure blood males upon degenerated females, I give the results of my own experiments in 1846 and 1847. I purchased seventeen ewes of Saxon blood, light fleeces, and of feeble constitutions; they formerly belonged to Mr. S. Mitchell, who sold wool from his flocks to Samuel Lawrence, in 1843, for fifty-six cents a pound, while that *from my yearlings* sold at the same time for fifty-three cents a pound, after sampling it. Mr. Lawrence told Mr. Mitchell that his wool was one of the finest lots in the United States.

I put the buck for which the American Institute gave me the premium in 1846, with the 17 ewes. I obtained eleven ewe lambs. In the summer after these were a year old, I sheared them when the wool was just a year's growth and the average weight of their fleeces was *three pounds thirteen ounces each*. After being fitted for market it lost thirty-two and a quarter per cent. of its weight. I then weighed the eleven ewes, and they averaged *forty-nine pounds each*, which would be eight pounds to one hundred pounds of carcass, and of that, five and an half pounds of wool to the 100 lbs. of carcass, fit for manufacture. In the spring, when I bought my Saxon flock, the weight of wool on them averaged only *two pounds four ounces each*. This wool was sold to Mr. Lawrence for \$1.12½ the fleece, making the same difference in the two lots Mr. Lawrence did in 1843. The half-bloods average fifty-two cents the fleece, more than the full blood Saxon. This is the annual income over and above the Saxon.

J. N. BLAKESLEE.

Watertown, Conn., Aug. 24, 1848.

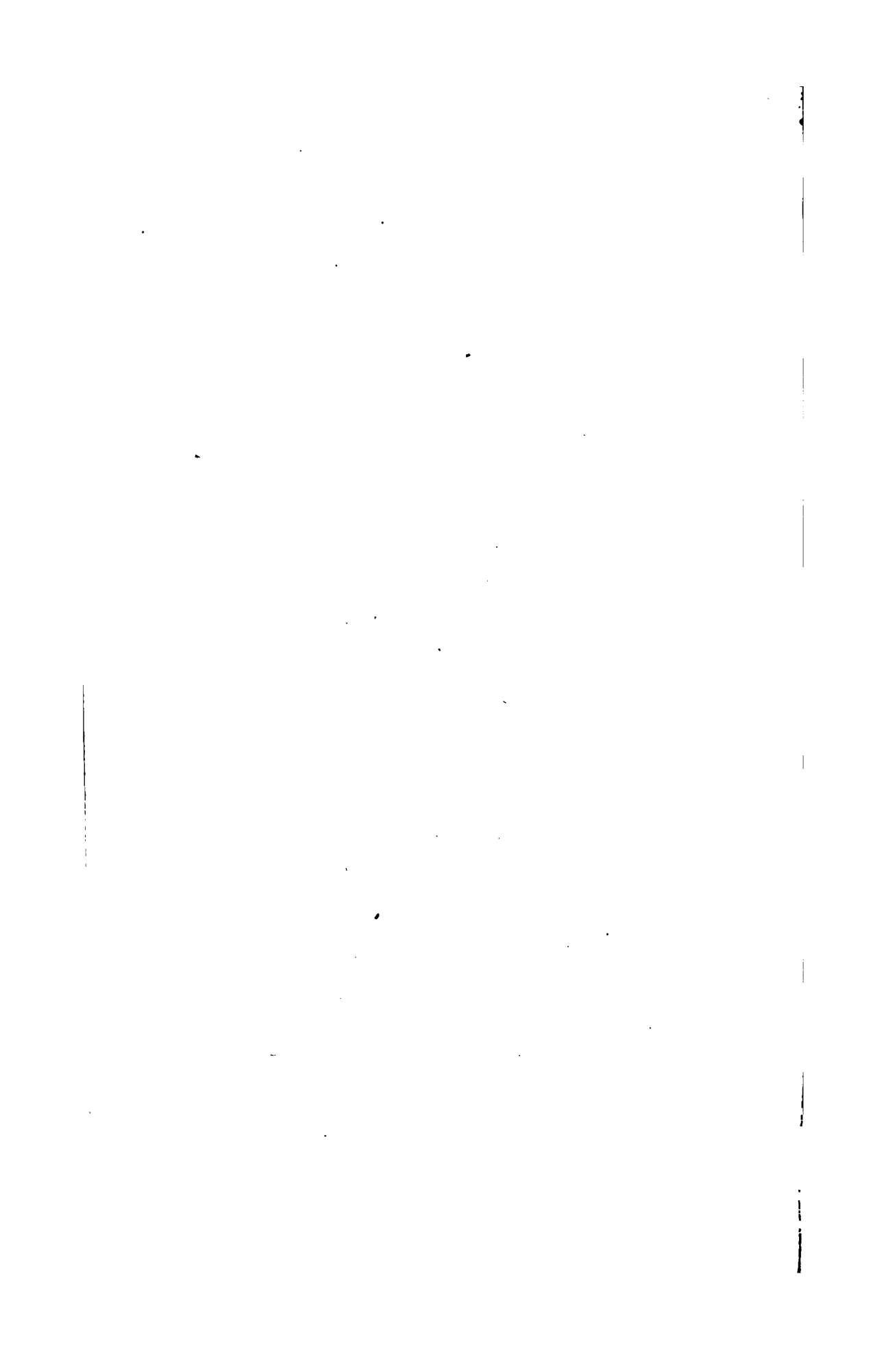
FILKIN CHEESEMAN'S STATEMENT OF HIS FAT CATTLE.

The fat cattle on which I was awarded the first premium at the late fair of the Institute, were of the native breed. I commenced fattening them in September, 1847, at which time they were six years old. I fed them twice a day six quarts apiece of ground mixture of corn and oats, each an equal proportion, and continued thus until June, 1848, when they were turned into good pasture and fed once a day until September, when they were fed as before and afterwards with an addition of turnips. The meal in the mixture was scalded before feeding.

The pair of cattle that were at the fair I sold in December, 1848, for \$200, the live weight of which was 4,650 lbs. I did not ascertain their dead weight.

FILKIN CHEESEMAN.

Clinton, Dutchess co., N. Y., March 9, 1849.



COMMUNICATIONS.

ORIGIN OF FRUIT.

BY R. L. PELL, of Pellham, Ulster Co., N. Y.

I MET the other day five or six fruit growers and agriculturists, one of whom asked from whence the *apricot, cherry, apple, plum, &c.*, as well as different vegetables were derived. There was some difficulty among them to answer the question, and as it is one that often presents itself to the imagination, when eating a luscious pear, or delicious peach, I have taken the pains to overlook authors treating the subject, and from many, Linnæus among others, have gleaned the following, which, with your consent, I will read to you, in order that you may obtain the information in the easiest possible manner, and without labor.

The Apricot originated in Amenia, from whence it derives its name, Amesian. Linnæus arranges it in his twelfth class, Icosandria Monogynia, and includes in the *genus* the *apricot, cherry,* and *bird cherry,* making them different species of the same genus. I have frequently on that account endeavored to inoculate the cherry upon plum stocks, and apricots upon cherry stocks, but without success. The apricot I have inoculated upon various plum stocks successfully.

It grows and flourishes in Arabia, China, Japan, Asia; and in the vicinity of Pekin they form forests, covering the hills and mountains. Thus far the old varieties are the best, viz: The Orange, Breda, Moorpark and Masculine. They are the sorts originally imported into England as early as 1767. Apricots enjoy a rich, dry soil, well tilled. Before planting a trench should be made about $2\frac{1}{2}$ feet deep,

and filled with surface soil, lime, rubbish, bones, charcoal dust, and in fact any substance capable of decay; after which the plants are placed in the surface soil 7 inches above the contiguous border, as it will sink when it consolidates. The roots should be spread fan shaped, and the tree gently shaken while the operation is performing. This should not be headed down until May, if they are set in the fall, which I think the best season. The plum tree is a native of Asia; the Damascene derived its name from Damascus. It is arranged by Linnæus in his twelfth class, and has for years been naturalized in America, and now produces large crops in various parts of our country. The State of New-York appears to suit it admirably. If a tree be planted, thousands will spring up around it, producing in a few years fine varieties, such as the Washington, Jefferson, and others that might be named, surpassing many of their best foreign varieties. This tree particularly enjoys heavy rich loam land. A strong decoction made of the bark is used by the inhabitants of Finland to cure venereal diseases.

A little salt occasionally placed around the roots is an advantage to their growth. Coe's Golden Drop, Bleecker's Gage, Jefferson, Orange and Washington are among the largest and best. When you select for planting, choose such trees as have straight single stems. Dig your holes three feet in diameter and two feet six inches deep, below that depth soften the sub-soil with your spade, then throw in some well rotted manure, a little salt, a handful of lime, and some fine charcoal dust, after which some surface soil, incorporate them well, then surface soil four inches above the surrounding earth. Set your tree as recommended for apricots, fill in with surface soil by hand to cover the roots, then compost, and after the subsoil first taken out, tamper the ground firmly about the tree, place a stake to it and tie it thereto; and you may expect an abundant crop from it in one sixth the time usually obtained by the mode of planting generally adopted. Last year, plum trees, around which I had placed a quantity of anthracite coal ashes, bore a fine crop, at least three years before I anticipated obtaining a single plum, as they were really too young to bear. It yielded to them sulphate of lime, potash and soda, besides imperfectly burnt coally matter; it is a capital manure, and may be applied advantageously to any growing crop.

The Peach, (*Amygdalus Persica*), is a native of Persia; it belongs to the twelfth class of Linnæus, and was brought in the days of the Em-

peror Claudius to Rome, and thence to Britain in the year 1680. Still the finest peaches in the known world are only to be obtained at Pekin, China, where, I am told, they grow as large as our finest apples. They were once supposed to be poisonous. Pliny mentions that the king of Persia sent them into Egypt to poison the people of that country, he being engaged in war with them at the time. The pits do contain a deadly poison, prussic acid. There are traditions which have come down from father to son, in China, of a peach tree which only bore fruit once in a thousand years, but conferred immortality on those who had an opportunity of eating it; and another tree which was protected by fifty or a hundred demons, the fruit of which caused immediate death to those who ate of it. Our country yields at this time probably more peaches than half the world beside. There are cultivators in Delaware who have orchards containing 100,000 trees; and in Jersey 20,000 and 30,000 is quite common. The tree is propagated with great facility, and will bear fruit in three years from the stone, or if inoculated two years from the time the operation is performed. It has been supposed that a peach tree needs no pruning; so far from such being the fact, there is scarcely a tree growing that needs it more, or requires better judgment to do it properly.

The yellows is a recent disease, and is probably caused by worms in the root and bad cultivation; care and attention will prevent disease, worms and death.

Nectarines, (*Amygdalus Nectarina*,) was introduced into England from Persia in the year 1562, and belongs to the twelfth class of Linnæus. It only differs from the peach in the smoothness of its rind, and firmness of its flesh. The trees are precisely alike, in appearance it is an exquisite fruit, and without doubt a variety of the peach, formed by some unaccountable accident. Both fruits have been known to grow at the same time upon the same branch. Hunts Tanny, and the early Newington, are fine varieties. They are managed precisely like peaches, and are sometimes infested by the red spider, which may be destroyed with lime water. Wood lice and wasps sometimes attack them. Sulphur water syringed upon the tree will keep them off.

^c Cherries (*Prunus Cerasus*,) came originally from Cerasus, a city of Pontus, they were brought by Lucullus after, the Mithridatic war into

Italy. The Romans had them propagated into all the countries they conquered. Within a hundred years after their introduction by Lucullus into Rome, they spread as far as the Rhine, in Germany. They were introduced into Britain as early as 1415, and belong to the twelfth class of Linnaeus, Icosandria Monogynia. The gum that exudes from the cherry tree, is equal to gum arabic. It is said that a hundred men during a seige were kept alive by taking this gum occasionally in their mouths, for more than two months. Delicious beverage is made from the Mazzard cherry in Europe. The Germans distil from them Kerschwasser, and Ratifia cordial is made at Grenoble; Maraschino by the Italians, which is a very celebrated liquor. The wood too is quite celebrated as a substitute for mahogany, tables and other pieces of furniture are made of it; the grain of the wood is fine, and capable of receiving a high polish. In Germany there are avenues of cherry trees 70 miles in length, planted on either side of the public thoroughfares. In Switzerland you meet with them in every direction. In some parts of Europe the people are commanded by the government to plant them along the public roads, in such cases travellers are allowed to eat as many as they choose, except the trees are marked by their owners for their own use. If a person should appropriate to himself fruit from a marked tree, he would be considered not only base, but a thief. When travelling in Germany I requested the postillion to get me cherries from a tree which appeared to be loaded with the finest imaginable variety of fruit. He said, sir, the tree is marked, and I would not touch a cherry growing upon that tree for one hundred scudi.

The Black Tartarian, originated in Russia, and was introduced into England in 1796, and in this country some 25 years since, it still ranks among our best sorts; Knight's early Black Bigarreau and Elton are fine varieties and well worth cultivating.

The Apple, (*Pyrus Malus*.) A. J. Downing says the apple is the world renowned fruit of temperate climates. From the most remote periods it has been the subject of praise among writers and poets, and the old mythologies, all endow its fruit with wonderful virtues.

The allegorical tree of knowledge bore apples, and the celebrated golden fruit of the orchard of Hesperus, guarded by the sleepless dragon which it is one of the triumphs to slay, were also apples according to the old legends. Among the heathen gods of the north,

there were apples, fabled to possess the power of conferring immortality, which were carefully watched over by the goddess Iduna, and kept for the especial dessert of the gods who felt themselves growing old.

In Devonshire and Herefordshire at the present day the farmers salute their apple trees with cider and toast to ensure a good crop the ensuing year.

Linnæus ranks the pear, apple and quince, together, making them all of the same genus and one species. They belong to his twelfth class, Icosandria Pentagynia, the species are: The wild or crab apple, the wild crab of Virginia, and the dwarf or paradise apple. There are now about one thousand varieties of the apple cultivated. The Newtown Pippin ranks highest throughout the world. And next to it I think the Spitzenberg is the best apple we have; it is a delicious desert fruit.

The Pear (*Pyrus Communis*) is a very ancient fruit. In the days of Pliny twenty kinds were known, and in the time of Virgil six or seven. Linnæus arranges them in the fourth section of his twelfth class along with quinces and apples. The pear was carried from Syria to Italy in the early occupation of that country by the Romans. Theophrastus speaks of old pear trees that were very productive. Virgil says Cato presented him with some. There was a favorite pear of Tiberius called after him on account of his partiality to it. They live to an old age. There are some mentioned by Rose as being 3 or 400 years old. There is a pear tree in England covering one-half an acre of ground, at least such was the case in 1805 or 6, it has produced 14 hogsheads of Perry, and is still enjoying good health, there is a tree, Mr. Downing says in Illinois which girths, one foot above the ground, ten feet, its branches cover 69 feet in diameter; it has borne 184 bushels of pears and is only 40 years old, the fruit is hard and of fine flavor. There is a tree on the Third Avenue, which was planted by Governor Stuyvesant 200 years ago. The wood of the pear is fine grained and much used by turners for tools. The leaves are capable of affording a fine yellow dye.

The Virgalieu is the best of all pears, was first raised in this country by A. Parmentier of Brooklyn, who obtained it from abroad. The Marie Louise, Bartlette, Jargonelle and Seckel, are all delicious

varieties and well worthy extensive cultivation. They enjoy and thrive the best in a strong loamy dry soil, require a little pruning, and should be set in orchard about 25 feet apart. It has its enemies which must be kept aloof by careful attention and good cultivation.

Quince, called *Cydonia*, from *Cydon* a town in *Crete*. It belongs to *Linnæus'* fourth order of the twelfth class of the sexual system *Icosandria Pentagynia*, the same as the apple and the pear. It makes a delicious sweetmeat.

It is a beautiful shrub, very productive, bearing large crops of beautiful golden fruit, easily cultivated from cuttings, enjoys a rich moist soil. It should be kept well manured, and trimmed, good cultivation amply repays the agriculturist, as it is a saleable fruit, and in its season always in demand. The Apple Quince and Portugal Quince are the most favorite varieties, and in fact the only varieties worth cultivating largely.

Fig Trees, (*Ficus Carica*.) The fig has been cultivated in England according to *Forsyth* since 1542. This genus is arranged in the third order of *Linnæus'*s 23rd class entitled *Polygamia Tuoëcia*. It is a native of Asia and Africa, but now perfectly naturalized in Europe. The Athenians and Romans, cultivated them extensively. I have grown two crops in one season, and brought them to perfection in the open air on the banks of the Hudson. In winter however, I found it necessary to bury them as our winters are too severe to leave them exposed. I had heard they would ripen earlier, by oiling the eye of the fruit, tried the experiment but did not perceive any advancement in its ripening properties. Those not oiled appeared as forward as those that were. The Purple and Brown Turkey are two of the best varieties. In fig growing countries the varieties cultivated are more numerous than those of the grape. They may be propagated from cuttings, roots, suckers and layers, as well as from seed. The first cataplasm recorded was made from figs. In the illness of *Hezekiah*, *Isaiah* said "Take a lump of figs, and they took and laid it on the boil, and he recovered," 2d Kings, Chapter 22.

The Grape (*Vitis Vinifera*) belongs to *Linnæus*, first order, and fifth class, *Pentandria Monogynia*. It was known as soon after the flood as any other plant, from the remotest antiquity. In all ages it has been considered the symbol of happiness and type of abundance.

In the pages of Scripture describing the flourishing kingdom of Israel in the reign of Solomon it is stated that "Judah and Israel dwell safely every man under his vine and under his fig tree, from Dan even to Beersheba." Persia is its native country as supposed. I believe it to be indigenous to all temperate climates, though the finest grapes are said to be cultivated in the vicinity of the Persian Gulf and Caspian Sea. It was introduced in Britain at the commencement of the christian era. It is a prodigious bearer. Mr. Hoare, has after long experience produced the following scale of the quantity of grapes a vine can mature, in proportion to the circumference of its stem measured just above the ground.

A vine 3 inches in circumference will yield 5 lbs.

3½	do	do	10
4	do	do	15
4½	do	do	20
5	do	do	25
5½	do	do	30
6	do	do	35
6½	do	do	40
10	do	do	75

On the banks of the Ohio there are vines measuring 3 feet in circumference, with branches 250 feet long. In France 500,000,000 of imperial gallons of wine have been made in a single year, the vine lives to a great age. Pliny gives an account of one 600 years old.

The Mulberry (*Morus*) is a native of Persia, it is ranked in the fourth order of Linnæus, 21st class, Monœcia Tetrandria. They were first introduced into England in 1596. The Duke of Northumberland has four in his grounds supposed to be 300 years old. Gerard in his description of the mulberry tree has the following curious paragraph. "Alexander in Atheneus affirmeth, that the mulberry trees in his time did not bring forth fruit in 20 years together; and that so great a plague of the gout reigned and raged so generally as not only men but boys, wenches, eunuchs and women, were troubled with that disease."

The Service Tree is cultivated in England. It belongs to the twelfth class of Linnæus' system, called Icosandria Trigynia. It is a

beautiful tree for a shrubbery. The wild service tree is our mountain ash, the seeds of which make good food for poultry; the wood is much used for picture frames, toys, etc.

The Gooseberry and Currant are arranged by Linnæus, in the first order of his fifth class, Pentandria Monogynia; and are supposed to be indigenous to England. From a small berry in the wild state, the gooseberry like the apple has been multiplied in variety, and brought to its present size and flavor by art, industry and good cultivation. It is now considered in England one of their most valuable fruit.

ORIGIN OF VEGETABLES.

BY R. L. PELL.

The Carrot (*Daucus Carota*) grows wild in England, where it is generally white, stringy and of strong flavor. The Garden Carrot now used in garden and field culture, was introduced by the Flemish refugees, during the reign of Queen Elizabeth, into Great Britain, where the leaves were used by the ladies, as ornaments in their head dresses at evening parties.

The carrot contains in 1000 parts 95 parts of sugar or saccharine matter, 98 parts of soluble nutritive matter, and three parts of mucilage or starch; ten pounds of the root grated or crushed, will yield half a pint of spirit, which is used in Ireland occasionally instead of small beer. Two good varieties have recently been introduced into France from Spain, which grew to a large size and are remarkably sweet; attempts have been made by French chemists to obtain sugar from them in a crystalized state, but without success. Good carrots are easily recognized by cutting them across, when it will be found that they consist of two parts, the outer one reddish, and the inner one yellow, the first is pulpy and sweet, the second is stringy. The greater the proportion of the external part, the more valuable is the variety, 1000 bushels may be raised to the acre.

Parsnips (*Pastinaca Sativæ*) this valuable plant also originated in England, it may be seen growing along all their fences in a wild state. You meet with it frequently in this country, the seed probably has

been introduced among vegetable seeds, at all events in its wild state, it must be considered a most pernicious weed, and should be eradicated the moment it makes its appearance on your farms, as it spreads rapidly, overcoming all its cultivated neighbors. It is a very sweet root, and contains a larger quantity of sugar than the carrot. To some persons it is unpleasant as a vegetable on this account. It is a very nutritive food for stock; horses are particularly fond of it; in 1000 parts of carrots in a green state, 99 parts of soluble nutritive matter, 9 parts mucilage or starch, and 90 parts of saccharine matter or sugar have been found. The Irish people make a very pleasant drink by brewing the liquor expressed from the carrot with hops, and in Scotland they are boiled soft, crushed and incorporated with potatoes, quantity for quantity, and fed to their children. It is considered by the Scotch as a most excellent and nutritive food. I would recommend it to the matrons of our Orphan Asylums, as a change of diet.

They have been grown in the Island of Guernsey four feet and three inches in length, and $4\frac{1}{2}$ inches in diameter, in rank, well pulverized soil. For table use they should be raised in a deep rather poor soil, by which means their strong taste is eradicated and they become farinaceous.

The Beet (*Beta Vulgaris*) originated on the sea-coast of southern Europe, and may now be seen growing wild, on the shores of the Mediterranean Sea, in the vicinity of Marseilles and Toulon. Trudescant introduced it into England as early as 1656, where it is principally used as a pickle; on the continent of Europe, and in this country, it is used cold, dressed with sweet oil and vinegar. It is rarely eaten hot, as in that state it has a sickish disagreeable taste, and not only that, but it frequently produces nausea, and is by many considered unhealthy.

The Mangel Wurtzel is a coarser variety of the same family, and is usually cultivated in England and America as food for stock. The French have an improved kind obtained by cultivation, from which they manufacture sugar equal to that obtained from the canes.

Margraaf, a Prussian chemist, first called the attention of Europeans to this subject in 1747. Chaptal was the first French chemist that established a manufactory; he was followed by others, and in
[Assembly, No. 244.] K

1825 there were 25 such establishments in France. Now there are over 400, and 70,000,000 of pounds of sugar are made in a year. 100 parts of beet root yield $2\frac{1}{2}$ parts of refined sugar. Sugar has been made from grapes, from turnips, parsnips, and from starch. In Italy, Hungary, and Bavaria, sugar is made from grass equal to that obtained from cane. The red sugar beet contains in 1000 parts, 148 parts of soluble nutritive matter, 14 mucilage or starch, 121 saccharine matter or sugar, and 14 parts of gluten or albumen.

Turnips (*Brassica Rapa*) may be found growing wild all over England. The English, however, have never been able to produce by cultivating this wild variety, so delicious a turnip as is grown in Hanover. I believe all the present fine varieties were obtained from seed originally introduced into England from Hanover. They are eaten raw in England and on the continent, as well as cooked in various ways. In hot climates they cannot be grown successfully; they enjoy a rich loam land, finely pulverized, and can be raised advantageously for cattle. There is a variety called the Swedish, which is considered the best for that purpose. The French have improved upon the old varieties, and have succeeded by cultivation in obtaining one particularly fine for the table called Navet, (*Brassica napus esculenta*), one of which has as much flavor as 12 common turnips. The turnip contains in 1000 parts, 42 parts of soluble matter, 7 of starch, 34 of sugar, and 1 of gluten.

The Potato (*Solanum Tuberosum*) has always been supposed to have originated in South America, somewhere in the vicinity of Peru. It ranks next to the Cerealia as a food for man and animals throughout Europe and the two Americas. How long it will hold that rank depends upon the continuance or cessation of the disease now so prevalent in both hemispheres. The potato was first introduced into England from the state of Virginia, by Hackluyt, in 1584, and given to Sir Walter Raleigh, who had it planted on his estate at Gough-hall, in Ireland, where it was cultivated to some extent, notwithstanding they were not generally used as food, until near the end of the 18th century. It was originally, and is still a very small, insignificant tuber in Peru and Chili; its present size and flavor are the result of careful cultivation. It is now used as food throughout the world, and appears to adapt itself to all climates, and all varieties of soil; an acre of land will usually yield twice the quantity of food planted with potatoes, that it will sown with wheat. In 1000 parts of pota-

atoes will be found from 200 to 260 parts of nutritive matter, 155 to 200 parts of mucilage or starch, 15 to 20 parts of saccharine matter or sugar, and from 30 to 40 parts of gluten or albumen.

Sweet Potato (*Convolvulus batata*) is entirely different from the common potato, and is usually raised in the tropics. It is therefore difficult to say in what country it originated. In our latitude it does not do as well as in South Carolina; still I have brought them to such perfection as to take the premium at the Fair of the American Institute over southern varieties.

The Radish (*Raphanus Sativus*) originated^d in China. They are composed of water, woody fibre, and acid matter. They are not nourishing, but pleasant on account of their spicy aromatic flavor and stimulative qualities, being one of the first vegetables that makes its appearance in early spring. They are welcomed as a harbinger of summer, and enjoyed by all.

Skirret, (*Sium Sesarum*), grows with several long tap roots, is little used as a vegetable, although Worldize in 1682, speaks of them as the "sweetest, whitest, and most pleasant of roots." It originated in China.

The Onion, (*Allium Cepa*), was known and worshipped 2000 years before Christ by the Egyptians, since when, it has been used in Egypt as food. It was also well known in Africa at very remote periods. There are several varieties; I have one called the potato variety, which multiplies by throwing out numerous bulbs; it is a valuable kind. In Wales they have an onion which never forms a bulb at the bottom. They are drawn out of the ground, and used for the purpose of a salad. It is one of the most hardy kinds, standing the severest winters in that country. It contains by analysis, water, sulphur, phosphoric and acetic acids, and some animal matter.

The Leek, (*Allium Porrum*), is a native of Switzerland, and tradition says it was introduced into Wales by St. David, where it is much used in soups. The Scotch likewise are particularly fond of it and in many instances prefer it to the onion. In this country it is not so generally used.

Chive, (*Allium Schœnoprasum*), is a native of Great Britain, and is found growing wild in their pasture lots. It belongs to the onion

tribe, and is one of the smallest of that family. The bulbs grow in clusters, and are used in soups, salads and omelets.

Garlic, (*Allium Sativum*,) this plant has an acrimonious taste, and most diabolical smell, and is to most Americans very offensive. In France, and on the continent generally, unless you peremptorily forbid them, the cooks will season every dish they set before you with it, as they consider it an indispensable morceau. The root grows in the shape of bulbs, which are enclosed in a membranous skin.

Shallot, (*Allium Ascalonicum*,) originated near Ascalon in Palestine. It was introduced into England by the crusaders. It is a bulbous root, resembling garlic, and is used in soups, sauces, &c.

Asparagus (*Asparagus Officinalis*) is found wild on the sea shores of Great Britain, and in the saline sandy steppes of Poland and Russia. It has been vastly improved by cultivation, so much so, that the parent variety can only be discovered by the botanist. The Romans were celebrated for fine asparagus of very large size. In England there are hundreds of acres now devoted to this root; the cultivation near this city on a large scale, would be very profitable. It is a digestible and light food.

Sea-Kale (*Crambe Maritima*) grows wild on the sea shore of Great Britain and Ireland. It is considered by the English as one of their most valuable indigenous vegetables. I have cultivated it for several years. My practice is to plant the roots about two feet apart, in well enriched garden soil; it will last a number of years. Early in the spring it is covered with square boxes and kept dark; when cut it is perfectly blanched, and if boiled for a great length of time, and served up with cream, it is a delicious vegetable.

Artichoke, (*Cynara Scolymus*,) is a maritime plant likewise, and was brought originally from the shores of the Mediterranean Sea. The globe variety is the best. I usually plant them in the fall, and protect them with manure; early in the spring they are uncovered, and the ground about them cultivated. In the month of August they form a large head on the top of each stem, which is eaten before it blooms, and while the flower is in an immature state. The part eaten is in the fleshy portion of the leaf; the heads are boiled and served up with butter, slightly seasoned with pepper and salt.

The Cardoon, (*Cynara Cardunculus*,) originated in Candia; it somewhat resembles the artichoke, but grows more lofty. It is used for soups, ragouts, &c.

Lettuce, (*Lactuca Sativa*,) was discovered in the Grecian Archipelago. The two principal varieties are the Cabbage and the Cos Lettuce; from these all the different kinds have sprung. It is much sought after in the spring; when dressed with oil, vinegar, pepper, &c., and eaten with meats, it is supposed to correct the effects of animal food.

Endive, (*Chicorium Endivia*,) came originally from Japan; it is much used in England and France, with ragouts, roast meat, &c.

Celery, (*Apium Graviolens*,) is a native of Great Britain. The wild plant there is called smallage, and grows near the sea shore. In its wild state it has an acid disagreeable taste, and is considered a dangerous plant to eat on account of its narcotic quality. The Germans boil it, the French use it in soups, and the Americans eat it raw. The cultivators in the neighborhood of Manchester, England, grow it to an enormous size. By judicious cultivation it may be made one of the best vegetables we have. It is a difficult vegetable to bring to good perfection.

Garden Cress, (*Lapsidium Sativum*,) is supposed to have come originally from Persia.

Parsley, (*Apium Petroselinum*,) came from Greece.

Taragon, (*Artemisia Dracunculus*,) came from Siberia.

Horse Radish, (*Cochlearia Armoracea*,) originated in England.

Nasturtium, (*Tropæolum*,) sometimes known as Indian cress, is a native of Peru.

Chevil, Thyme, Sage, Mint, Savory, Rosemary, Lavender, Tansy, Saffron, and numerous other plants, are common in Europe and this country.

Rhubarb, (*Rheum*,) has only been known and generally cultivated within the last 30 years. It is used for pies, tarts, puddings, &c. It has a tart taste, and when used for pies can scarcely be recognised from apples. It is easily cultivated, and perennial.

Tomato, (*Solanum Lycopersicum*,) is a native of South America; it is an excellent vegetable, and is much used in soups, sauces and for pickles, catsup, &c. There is a variety in my garden that came last from Cuba, which I have manufactured into figs of a passable quality; they are likewise used as a vegetable or sauce. The plan my gardener adopts with the tomato, is to raise it on a frame, consequently they are free from the earthy taste and smell which they are liable to contract if allowed to trail on the earth.

The Egg Plant, (*Solanum Esculentum*,) does not succeed as well in Great Britain as in this country. I imagine the climate there is too moist for it. Those that are grown require to be under glass. It is a South American production.

Yam, (*Dioscorea Sativa*,) is grown in Africa, West Indies, South America and the East Indies, where it is eaten as bread. It is much like the potatoe; is a native of the East Indies, from whence it spread through the countries named. As a food it is light and nutritious. I have several varieties growing in my green house.

The Cabbage belongs to a numerous botanical family of the Cruciferae, and was originally a weed growing throughout England, to one of which, by means of careful cultivation, the world is indebted for all the varieties now known. The original wild plant was called sea colewort, (*Brassica oleracea*,) and is now found growing wild on the cliffs in many parts of the sea coast of England. It is a scanty plant, of small size, weighing half an ounce; it is totally unfit to eat. To many nations the credit of bringing this insignificant plant to what it is now, is due.

The Romans, the Hollanders, and even the Americans, are entitled to much praise for their exertions. The Cabbage tribe decays very rapidly, and the odor is exceedingly unpleasant. The Dutch make a dish with cabbage called sour-kroust, of which they are particularly fond; they are generally considered indigestible, and should be well boiled before eaten. The other cultivated varieties of cabbage are Borecoles, Kales, the headed cabbages, together with red cabbages, Savoys, Brussels sprouts, &c.

Cauliflower, (*Brassica Oleracea*,) division Botanytis; this division differs from the other varieties in having small compact flowers on a tall stem, it came from the island of Cyprus. I usually grow the

plants from seeds, in a hot bed in the fall of the year, pot them in December, and keep them under glass in a conservatory during the winter, in the month of May they are planted in the open air, and covered at night with hand glasses. In the month of June they are exposed to the air night and day, and in the month of August are fit to cut.

Broccoli is supposed to be a sub-variety of the cauliflower, the head is a dark green, while that of the cauliflower is white. Broccoli if properly managed will succeed cauliflower, and remain in season throughout the fall.

The Common Pea, (*Pisum Sativum*,) has been long known in China and Japan, and is supposed to be a native of southern Europe; all the varieties and they are exceedingly numerous, were derived from the white and the gray. Emhoff analysed peas and gave in 3000 parts, 1265 parts of starch, fibrous matter 840 parts; mucilage 249, saccharine matter 81, albumen 66; earthy phosphate 11; volatile matter 540; loss 229.

The Garden Bean, (*Vicia Fala*,) are supposed to have been introduced in Britain by the Romans, and to have come originally from Asia. There are a number of fine varieties, such as the Windsor, Mazagan, Green China, Dutch &c.

Bean flour mixed with wheat makes good bread, and fed to cows will much increase their milk. Ripe beans contain of nutritious matter in 1000 parts, 570 parts, 426 parts of mucilage or starch and 103 parts of gluten or albumen.

The Kidney Bean, (*Phasiolus Vulgaris*) is a native of India, and is a wholesome variety, being extremely nutritious, they are frequently salted down in casks for use on long sea voyages.

The Gourd, (*Cucurbita*,) composes a large family, viz, the Melon, Pumpkin, or Squash, American Gourd, Mammouth Gourd, &c, they are often used in Paris as a substitute for potatoes and carrots, and in other countries for bread, soups, stews &c, likewise as food for cattle and hogs, oil is expressed from the seeds and used in lamps.

The Vegetable Marrow (*Cucurbita Orifetæ*) is a very fine variety, and was brought from Persia. • I have raised it for several years, and give it the preference over all others, it is exceedingly dry, makes an excellent bread and is prolific.

MOUNT AIRY AGRICULTURAL SCHOOL.

MOUNT AIRY AGRICULTURAL INSTITUTE, }
 Germantown, Pa, Feb. 22, 1849. }

Hon. Henry Meigs, Dear Sir:—Knowing of no more appropriate or efficient medium of informing the intelligent public of the progress and success of my Agricultural School, than through the popular annual report of the American Institute, I have decided to forward you the following summary account of it for publication in your report for the year 1848.

I removed my agricultural school from Dutchess county, N. Y., (where I had been in operation for the last three years,) to Mount Airy, Penn., in April last. We had but nine pupils during the summer term, but our number has now increased to fourteen, and from present prospects, we shall have as many as we can accommodate during the coming summer term.

The present class are all, but one, from the United States. Their ages range from fifteen to twenty-seven years; they are young gentlemen of good capacity and very amiable character, from families of the highest respectability of the atlantic states, from Maine to Florida. J. Tell Ferras, Esq., a Brazilian gentleman of the highest respectability, and liberal acquirements, has been with us since we opened, and intends remaining until he has availed himself of a complete course, when he is to return to preside over an agricultural college in his own country, which that government design founding on his arrival, under his special direction.

Our course includes thorough practical instruction in every branch of husbandry to which the climate and soil are adapted, with the use of the best modern improved implements, vehicles and machinery, most economical means of fertilizing soils, management of the dairy on the soiling system; tillage, draining, and fencing; the principles of breeding, training, fattening and slaughtering stock, curing meats, &c. &c. The students all participate in every branch of farm labor, in which they are occupied about one half of each day, and are taught to perform every thing in the proper manner, and with the greatest ease and facility. They are also required to keep a replete diary or farm journal throughout the year, to survey and map the farm with all its divisions, and keep a separate account with each lot in culture, in order that they may be able at the end of the year to exhibit a full

account of the expense and profit of the farm as it stands. The time is appropriately divided between the labor of the fields, garden, stables and workshops, and the study room; the alternating of which renders the character of our course of instruction what has very justly been denominated *spice of life*. The literary course consists of a thorough academic course, with highest branches of mathematics, surveying and engineering. The natural sciences with direct application to agriculture and five modern languages. In pursuing the sciences, the students are each required to lecture in turn before the class and the public; and those listening, are required to make rigid criticisms on the matter of the lecture, (which must be as far as practical in original language, as they are instructed to avoid a repetition of the language of the author they consult,) also on the manner and style of the speaker. This course not only insures a thorough understanding of the subject they are pursuing, but gives them the habit of expressing their ideas with ease and fluency, and effectually removes all embarrassment. They all board in the family of the principal, as also do the professor and tutors.

There are connected with the institute upwards of seventy acres of beautiful land, with spacious and commodious buildings of every description needed.

Various experiments in tillage, seeding, manuring, feeding and breeding the domestic animals, in horticulture, floriculture, &c. &c., are made for the benefit of the class. A public examination is held in both departments at the close of each term.

They have also the advantage to be derived from participating in the discussion of all the most important subjects pertaining to the management of the farm, at the meetings of the Mount Airy Farmers' Club, in which they all take an active part, and preserve notes on the discussions for reference. The site of the institute and its vicinity, has so long been proverbial for health and the beauty of its scenery that to essay upon its advantages in these respects would be superfluous; suffice it to say, there are extensive ornamental grounds, abounding with a great variety of exotic as well as choice indigenous trees, shrubs and flowers, besides many choice green house plants. The entire charge for board and tuition in the above named branches, is but \$200 payable semi-annually in advance.

Truly your ob't servant,

JOHN WILKINSON.

REMARKS ON MANURES.

BY ROSWELL L. COLT.

I am fortunately situated for being supplied with manures. I get the waste of a large flax and hemp mill, simply for the cost of cartage. I get 30 bushels of night soil at 75 cents. I get any quantity of swamp mud for the digging. With the charcoal dust, night soil and sifted ashes $\frac{1}{2}$ wood and $\frac{3}{4}$ anthracite, at $1\frac{1}{2}$ cents per bushel, I made a compost with which I manure my corn lands, and for garden vegetables, beets, carrots, &c. For my potatoes I prefer lime and anthracite ashes, and last year though the yield was small, I had fine potatoes, no rot. Last year (in November, '47,) I tried the planting of potatoes; a part I covered with salt hay, a part I left uncovered. The yield was small, no rot. Some I manured with lime, some with charcoal dust, no difference in yield or flavor. The same spring I planted potatoes with barnyard manure; the yield was greater, but hollow-hearted and watery. I have come to the conclusion, for quantity, you must have barnyard manure, for quality, no animal manure.

I have tried guano and think it valuable, but with the sources I have of making a compost of night soil and marsh mud, and oyster shells at $3\frac{1}{2}$ cents per bushel, with brush to burn, cost, only cutting, making the lime not $2\frac{1}{2}$ cents a bushel, and the swamp mud, I can enrich my grounds cheaper than to buy guano or your New-York poudrette at the price asked.

You have a source for manure in New-York, I only wonder no one has thought of, that is the refuse of your slaughter-houses, where pigs and cattle are killed. Let them buy from the charcoal yards the dust, which can be purchased at 4 or 5 cents a bushel, mix this with wood ashes and ground plaster of Paris and common copperas, sulphate of iron, and a manure can be made at $\frac{1}{4}$ the price of guano of equal value, say for

4 bushels of charcoal dust,.....	20 cents.
1 bushel of ground plaster of Paris,.....	15 "
2 pounds of sulphate of iron,	5 "
	—
	40 "
	=

and mix this up with the blood of animals, and even the guts, say as much as three bushels will absorb, and you will have the richest compost that can be made ; add two bushels of wood ashes, and then you make it still better, and then you have some 14 or 15 bushels of manure at the actual cost of 65 cents, or say with labor 75 cents, or 5 cents a bushel, worth past all question 25 cents a bushel, and I would as soon have it as guano.

It does not do to mix lime with animal manure. I mix lime with marsh mud and refuse of the flax mill above referred to, and find it of great value. I am satisfied that on my clay lands anthracite ashes is of value, if for no other purpose than simply to open the lands and let air into the soil. Now in addition to all these sources of manure, I have three farm horses, three pleasure horses, four colts, two bulls, four oxen, eight cows, ten heifers, and twenty pigs.

You will see I am in the way of making my lands rich without going to Peru.

ROSWELL L. COLT.

TURNIPS AS FOOD FOR CATTLE.

BY JOHN WILKINSON.

Turnips may be liberally fed to milch cows without imparting any unpleasant flavor to the milk or butter, by the following process: Place the whole turnips into a steam-box, (with chopped hay, straw, or corn fodder, and *steam* them until they are soft.) There should be some apertures in the top of the box, that the steam may escape whilst they are cooking; after they are soft the apertures should be closed, and the steaming process continued until the material with which they are steamed is perfectly saturated with water and the flavor of the turnips.

By this process all the strong unpleasant flavor of the turnip is removed, and a palatable one imparted. In connection with this experiment we made the following invaluable one, in testing the comparative value of cold and warm food and drink for milch cows. The experiment was conducted thus: A herd of nine cows in a stable

were fed with food, prepared as above, and allowed to cool before it was fed, and the cows were turned out into the yard to drink cold water, where they remained some two or three hours, morning and evening, in the cold air, (the weather being very cold,) the food was given in the stables, and the cows remained in all night. The milk was carefully measured for one week, and the amount of feed given noted. The succeeding week the same amount of feed prepared in the same manner was given warm, the stable temperature was kept above freezing, and the chill taken off the water, the cows being constantly kept in the stables, and the water carried to them. The result was, that there was an average gain or increase in the amount of milk secreted of about one pint per diem for each cow, or nine pints, which, at five cents per quart, amounts to twenty-two and a half cents per day, which will leave a nett profit in favor of the warm stable, food, and drink, of about thirteen cents per day on the nine cows, or about \$4 per month, which is the usual wages paid a common laborer in winter in this region. Besides this advantage the cows were much more comfortable, and the labor of turning them out to the yard and putting them up again, was more than that of carrying the water to them, as they required but little, being fed with moist (steamed) food, about one-third of which was turnips, which are well known to be very succulent.

We have also fed our swine with warm swill during the past winter, in which we have found a decided advantage.

The above are extracts from the journal of the Mount Airy Agricultural Institute.

JOHN WILKINSON, *Principal.*

Germanstown, Pa., March, 1849.

GEOLOGICAL TOUR IN THE STATE OF NEW-YORK.

BY E. MERIAM OF BROOKLYN, L. I.

John W. Chambers, Esq. Act. Sec. Am. Institute.

DEAR SIR—During the autumn of 1848 I made several geological and meteorological tours, in various sections of the State of New-York, during which I saw much, the record of which I think will be both interesting and useful to the public.

On the 27th of October I ascended the White Face peak of the Adirondacks; it was then covered with snow about half way down, from its pinnacle to its base. I ascended the mountain in the autumn of 1844, and attempted to ascend it in the month of May, of that year, but was driven from it by the smoke, the forest on the east side of the mountain having taken fire, and was burning with great fury, filling the air with smoke. The timber on the plains was also burnt, to the extent of thousands of acres.

The loose earth that covers the rock of which this mountain consists, is not more than twelve inches in thickness, on an average, and must have been completely calcined by the fire. After the heat had subsided, a thrifty growth of Blueberry bushes sprung up in the calcined earth, and were most abundant; and during the last summer near two thousand bushels of this choice mountain fruit was gathered from the burnt district, and taken to the Montreal market. The germ was in the fire; what a sower of seed—wonderful! The Blueberry never grew on this ground before since the mountain was visited by white men.

The timber growing on the mountain not visited by the flames, is large; spruce, hemlock, &c., and near the base is balm of Gilead, white and yellow birch, beech, maple, and other hard wood. The trees on the high mountain suffer less from the wind than those on the plains. On the south side of the White Face peak of the Adirondacks, and between it and another high mountain, the west branch of the Ausable passes; its path is a mountain gorge, and in this are the High Falls, a cataract in the bosom of the forest, of 100 feet perpendicular fall; from this cataract to the outlet of the river into Lake Champlain, a little north of Port Kent, a distance of 30 miles, is a succession of falls, in all equaling 1,200 or 1,300 feet. Above the level of this river, in the high hills, are large bodies of iron ore of very superior quality, from which the Peru iron is manufactured. White Face peak is about 4,500 above tide; the earth covering of the mountain rock does not average one foot in thickness, and yet it supports a luxuriant growth of vegetation.

East of the gap through which the Ausable runs, the farmers inform me that they are unable to raise winter wheat, as the wind, which is strong through the gap, blows the snow from the ground, and the young wheat consequently suffers from frost. The fruit also suffers from being blown from the trees.

On the north side of the White Face peak of the Adirondack, is Sampson's Pond, to the west is Lake Placid, both pretty sheets of water. In Sampson's Pond I visited a large granite boulder that is entirely surrounded by water. On this bare rock the lung wort was growing with no other nourishment except what it derived from the rock and the atmosphere. Some of these plants were of the size of a small tea saucer, and of about the same thickness, supported by a stem adhering to the rock not larger than a knitting needle, and not a quarter of an inch in length. This plant, when boiled in water, imparts to it a mucilaginous property which contains much nourishment, and is used in the neighborhood by persons of consumptive constitutions, and it is believed with beneficial effects.

In a tour which I made to the northern shores of Lake Ontario, and in the wilderness north and west of that locality, I obtained wild rice which grows spontaneously in northern lakes with mud bottoms. The wild rice obtained grew in Rice Lake, some of it where the water is twelve feet deep. The plant grows out of the water to the height that rye attains above the ground. When fit for harvesting the Indians enter the aquatic grain field with a bark canoe, and with a long pole turn the rice heads over the sides of the canoe, and then with a stick beat out the grain, and it falls into the canoe. Wild geese and ducks feed on this grain. I have a small quantity of this rice on hand, which I should be pleased to distribute for cultivation to any person having a pond of water suited to its growth. The grain is nearly black, and larger than rye kernels. I have used it in my family, and find it as good as the white rice. It requires more boiling. It possesses the valuable property of growing where nothing else can be profitably cultivated, and besides, it grows in localities where the water is so clear and pure as not to impair the health of the persons resident in the neighborhood of these aquatic rice fields. Rice Lake is subject to volcanic action.

On the shores of Lake Onondaga I found the Samphire plant growing most luxuriantly; in summer it is a beautiful green; when the frost touches it the green changes to a beautiful and brilliant red. The same plant I found growing in the sand on Coney Island.

On the shores of Lake Onondaga I found calcareous *Geodus*. These stones are about the shape of a sugar almond, many of them of larger size, they are white. When broken, a cavity is found in the

centre as large as a small bean. When dry they float on the water. They appear to have been formed on the bottom, or beach of the lake, by being moved over the sand by the wind and waves, and thus shaped from angular pieces of marl. The cavity is formed by the action of heat.

Very near the shores of the lower lake of the Cratean lakes of Manlius, on the morning of the 27th of November last, I examined a great number of ice or frost blossoms. The temperature of the atmosphere at that time was 26° of Fahrenheit. The ground on which these blossoms had grown was a black earth, and as dry as a bed of ashes. Potatoes had been cultivated there the last season. The frost or ice blossoms were formed around the stem of weeds, or vegetable which was then dry, and were in contact with the black earth; its form was much like that of a white pond lily in its fullest bloom; the leaves of the flower as numerous and of the same shape; the centre of each leaf perfectly transparent, the middle between the centre and the outer edges translucent, the edge opaque and of the color of snow; they were delicate and most exquisitely beautiful, no description of them could equal their beauty. I plucked one of these frost flowers from its resting place and carried it half a mile on the lid of my Geological basket, but when I called at a house to rest, in handling it the flower dissolved, and thus perished in my hands; I regretted removing it from its companions, for I had despoiled it of its beauty. It was not destroyed, but changed, and will at some future period form the diamond dew of a brilliant and charming morning.

In the same locality, I obtained beautiful specimens of transparent solenite, the isinglass of gypsum; this crystalizes in eight-sided flattened prisms, and when calcined becomes opaque, and opens like the sheets of a quire of letter paper, but the laminæ are so thin that 1,000 of the layers would not equal an inch in thickness.

The upper Cratean lake contains about 30 to 35 acres of surface, it is situate in a depression or crater, in the top of a hill, the shape of the crater is that of the inside of a tea cup; the banks are about 200 feet high; between the water and the top of the crater within the concavity, is a thrifty growth of timber, the temperature on the top of the bank was 26° , at the foot, near the water 35° , in the water 10 feet below the surface 46° . Here is ground well calculated by its warmth for

the planting of a vineyard. The water is deep, said to have been sounded 400 feet. It has a deep green color when seen from the bank, but when lifted in a glass vessel, is perfectly transparent. Trees and limbs of trees, when fallen into the water, become incrust-ed; those which have a horizontal position, are white; those vertical, green. I raised a limb from the deep water, and brought it home with me, it resembles corals, and is a deep green color: A bubble on this lake, when floated over a white horizontal strata within three inches of the surface of the lake in bright sunshine, gives a four pointed star as the figure of its focus. I brought a bottle of the water of this lake home with me.

Wood, which has been taken from the lake for fuel, gives out a strong odour of sulphur when burnt. The banks below the water are nearly perpendicular, ragged, and of startling aspect. On one side of the lake are deep sinks, some of which terminate in open chasms. The banks are formed of sulphate of lime. A few years since the lake rose suddenly several feet, and receded as rapidly, and continued to ebb and flow for some time, with a loud noise.

The lake is of volcanic origin, as it has sunk down from the displacing the lower strata. It is in the northern edge of the hills which border the long level of the Erie canal which extends 70 miles without a lock. These hills divide a trio of water courses; the tributaries of the Mohawk run east; of the Susquehannah south, and of the St. Lawrence, north. The electric and galvanic energies of the ocean here act upon itself in its triune arteries that here meet at their extremities, and thus an immense saline deposit has been formed; the brines of Onondaga are thus accumulated.

Near Kirkville, a mile or more from the Crataean lakes, calcareous tubes, or cylinders, of various sizes are exhumed in plowing. These are formed by the incrusting of trees; the wood subsequently decaying leaves the outside a rock petrefaction, or rather a concretion. The surface of the ground below the lower lake is covered with porous stone in rough and angular pieces, resembling pumice stone, and some of it equally light.

In this level section of country are inexhaustible beds of black alluvial earth and white marl, and sufficient in quantity to enrich every acre of poor land in this great commonwealth. This black alluvial earth is worth more for Long Island land or any dry land than leached

ashes, and will cost less than half the price when delivered. I made examination and inquiry as to the expense of transporting this black earth and marl from the district in which it is so abundant, to the shores of Long Island, and found it to be only two dollars per ton.

I brought home with me a bushel of the earth and marl, and when it becomes dry will weigh it. Allowing it to weigh forty pounds to the bushel, then a ton would make four New-York city dirt cart loads, of fourteen bushels each, which would make the cost but fifty cents per load for transportation. It could be delivered on canal boat from the ground for one shilling per load. Leached ashes are sold by the soap makers for ten shillings per load of fourteen bushels, to be added as carting and boating. Thus it will be seen that this marl and earth presents a newly discovered mine of wealth to this great State, worth more than all the gold of all the Californias, for it will yield an annual crop for all time.

This section of the state where the rich deposit exists in such abundance is wet, but it lies so much higher than the water of Lake Ontario, that it could be drained into that great reservoir, and made one of the richest and most productive districts in the world.

I traversed over in various directions during several tours which I made in this section of the State.

Plank roads are working wonders in this district, as well as in other portions of the State which I visited. These roads can be used on water beds, and can be travelled at all seasons of the year, are more useful to the great farming interest than railroads, for the reason that the farmer can use them with his own team, and at a season of the year when his teams are usually idle.

Plank roads cost from \$900 to \$1,500 per mile; are made of hemlock plank, two inches thick, laid on sleepers running lengthways of the road, 4 inches square. The plank are cut in lengths of 8 feet, and bedded in the ground, the sleepers keeping the edges even.

I travelled on several of these roads, and observed the evidences of prosperity which was visible in the improvements of farmers. I saw no old hats or old garments stuck in the windows as a substitute for glass, nor did I find any barn doors off the hinges, or hanging by a single hinge.

[Assembly, No. 244.]

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The appearance of a farmer's house and barn is an excellent indication of his thrift.

In the neighborhood of Syracuse, where near five millions of bushels of salt is made annually, and in the neighborhood of Oswego, where flour is turned from the mills in great abundance, the farmers are collecting their timber for barrels, and a cooper's shop is to be seen near every farm house where the timber from the farm is made into barrels, and the plank road is used to transport them over to a market.

Farmers' sons in these districts are good young men; they are industrious and prosperous. Here are good dairies too, and farmers' daughters can well afford to wear silks and satins, for they earn the clothes they wear.

I called at the house of a wealthy farmer in Manlius, in Onondaga county, Mr. Austin Smith, a middle-aged man, who has made himself rich by his industry and economy. He earned the money with his own hands to buy his farm, and then worked it himself, and from the labor of his own hands improved it. I found on each side of the road leading through his farm a row of sugar maple, a very thrifty growth. Mr. Smith informed me that he had sold in one year \$2,800 worth of produce from his farm, from which he had a nett gain of \$1,700.

I called at his house to make inquiry about the geology of his district, and he insisted on my stopping under his hospitable roof. I found his residence a pleasant home, everything desirable set before me that could be found in the most splendid mansion in the great metropolis of the State.

It was highly gratifying to find here such a beautiful illustration of the great value of industry and economy.

Mr. Smith, when a young man, hired out to an industrious farmer by the month, and his earnings in this, by some considered humble station, were the germ of his future fortune.

In one of my tours I visited the deep boring at Lockpit, near Clyde, and on the great Erie canal. This well has been sunk to the depth of 401 feet, and water obtained from it of full saturation. I

have a quantity of this water, and it is of much greater specific gravity than the waters of the Dead Sea. Twenty gallons of this water will make a bushel of 56 lbs. of deliquescent salt, which for agricultural purposes is worth more per bushel than any other salt of which I have any knowledge.

Salt can be made here for four cents per bushel. A barrel of the water of this well run through a lead pipe of one inch bore, and one hundred feet long, in a warm apartment, would condense as much atmospheric air in twenty-four hours and convert it to water, as would equal its own bulk. Thus it is qualified to operate beneficially on dry lands in imparting moisture by transferring it from the air to the ground.

This deep boring passes a subterranean river of strong current, of 14 feet depth of volume.

Selenite, in pretty eight-sided flattened prisms are formed instantaneously in this boring by the commingling of two veins of water, which at the point of union are exact saturation, producing instantaneous crystalization, a pretty illustration of the harmonious action of the sublime laws of nature.

I have made several visits and extensive examinations of the saline districts of Onondaga. These salines are very extensive, and very productive. Eight hundred cords of wood are consumed daily in the manufacture of salt. Forty gallons of the natural brine produces a bushel of 56 lbs. of salt. There has been no improvement made there in the economy of salt-making; like the Chinese, they have experience without improvement. In all these extensive works there is no shelter for wood in stormy weather; wet wood is burnt instead of dry, and coarse wood instead of being split fine, and additional to all this the wood is burnt upon the ground instead of grates. The front kettles are heated red hot; the salt thus heated becomes fused, and adheres to the kettles, and once a week the fires are stopped, the caking of the kettles, sometimes six inches thick, cut out with axes, which often destroys the kettle. This caking is thrown away as valueless. I brought some pieces of it home with me. It is more valuable for farmers for salting cattle or for manuring land, than any other salt, for it dissolves very slow, and that slow dissolving also makes it good for cattle pastures, for a lump of it will last a whole

season, whereas common salt dissolves rapidly. A piece of this salt I picked up in the street of Salina, while riding through it in company with Mr. Geer, the State Superintendent of the public salines. I brought it with me to New-York, and sent it to a laboratory where sal soda and soda ash is made from common salt, and it proved to contain 98 per cent. of pure salt. This salt thus thrown away is therefore superior in quality to any salt made at the salines. It is vitrified salt, the impurities are driven off by excessive heat.

I am free to say that there are few places in the world where there is a greater opportunity of improvement in the process of manufacturing than the public salines of Onondaga.

I had intended to have made you a very lengthy communication in relation to these salines, but the opportunity of leisure does not afford the time, and I have thrown together this hasty communication, hoping and trusting that it may be found to contain some things, the knowledge of which may benefit somebody.

Yours very respectfully,

EBEN MERIAM.

Brooklyn Heights, March 10th, 1849.

THE FARM OF THE BLOOMINGDALE ASYLUM.

New-York, February 10, 1849.

To the American Institute :

GENTLEMEN:—The increasing population of the city of New-York greatly augments the demand for fruits and vegetables, and is bringing into requisition the soil fitted for production and convenient for transportation by railroads and steamboats. This already extends to a circuit of over ten to one hundred miles distant from the city, which is thus made tributary, and furnishes for our market its abundant supplies.

Through the kind assistance of a friend, I have been enabled to obtain a statement from the garden of the Bloomingdale Asylum, which I herewith communicate, and which I deem of great value. This statement will be particularly useful to new beginners, who will

learn the method of keeping accounts, and see the astonishing production of a garden properly managed.

Respectfully yours,

JAMES TALLMADGE.

BLOOMINGDALE ASYLUM.

Statement of the products of the farm (of 29½ acres under cultivation) with the market value for the year 1848 :

Garden.

Potatoes, (crop failed),	370 bushels,	50 cts.,	\$185 00
Sugar Beet,	260 "	37½ "	97 50
Blood Beet,	95 "	50 "	47 50
Turnips,	730 "	31¼ "	228 12
Parsnips,	120 "	50 "	60 00
Carrots,	30 "	50 "	15 00
Onions,	50 "	75 "	37 50
Rhubarb,	60 "	\$2 00 "	120 00
Asparagus,	45 "	3 00 "	135 00
Radishes,	125 "	1 00 "	125 00
Tomatoes,	150 "	50 "	75 00
Cucumbers,	96 "	75 "	72 00
Corn,	150 "	37½ "	56 25
Egg Plants,	30 "	50 "	15 00
Beans,	130 "	50 "	65 00
Peas,	65 "	75 "	48 75
Spinach,	210 "	75 "	157 50
Squashes,	125 "	37½ "	46 87
Pumpkins,	90 "	37½ "	33 75
Nasturtiums,	1 "	"	2 00
Peppers,	5 "	75 "	3 75
Citron Melons,	80 No.	12½ "	10 00
Celery,	3,000 heads.	3 "	90 00
Cabbages,	4,000 "	4 "	160 00
Lettuce,	4,000 "	2 "	80 00
Salsify,	2,500 "	1 "	25 00
Leeks,	1,000 "	½ "	5 00
			<hr/>
			\$1,996 49
			<hr/>

Farm.

Hay,.....	40 tons, at \$12 50	\$500 00
Oats in the milk,.....	14 " 10 00	140 00
Oats, ripe,.....	60 bushels, 37½	22 50
Straw in bundles,.....	1,155 bundles, 4	46 20
Pork,.....	2,730 lbs., 6	163 80
Butter,.....	601 lbs., 22	132 22
Milk,.....	4,409 gallons, 18¾	826 62
Eggs,.....	322 doz., 14	45 08
Poultry,.....	165 lbs., 8	13 20
		<u>\$1,889 62</u>

Orchard.

Apples,.....	75 bbls., at \$1 50	\$112 50
Pears,.....	50 bushels, 1 00	50 00
Cherries,.....	150 " 1 00	150 00
Currants,.....	25 " 1 00	25 00
Peaches,.....	10 " 1 00	10 00
Strawberries,.....	2 " 6 00	12 00
		<u>\$359 50</u>

Farming Department in account with Bloomingdale Asylum.

DR.	CR.	
To *Farmers wages,....	\$773 90	By am't of vegetables, \$1996 49
do board,....	520 00	" hay and milk, 1889 62
do implements, 12 80		" fruit,..... 359 50
Manure,.....	308 76	sale of live stock, 97 50
Live stock,.....	78 09	
Grain for cows,....	120 00	
Hay and vegetables, consumed by cows,..	388 00	
Bal. in favor of farm, 2141 56		
	<u>\$4,343 11</u>	<u>\$4,343 11</u>

* Six men, viz: one farmer, employed the whole year \$25 per month; one teacher, who also does the ploughing and is employed the whole year at \$12 per month; four hands employed about half the year at \$10 per month. In addition, there is a woman who takes charge of the milk, but her time is chiefly occupied as a servant in the Asylum. The churning is done by the men.

ON SHEEP AND WOOL.

BY MR. ANCRAM OF MICHIGAN.

In compliance with the requisitions of the Institute, I respectfully offer three papers, marked A, B, C. Paper A. Wool Mattresses, the only material that ought to be used for bedding. Paper B. Of the importance of wearing flannel next to the skin, and the manufacture of flannel in United States, home market for wool, &c. Paper C. Experiment recommended for the sole purpose of discovering the food that creates wool.

To write an essay on sheep would not only take a volume, but volumes; each particular breed of sheep must be treated separately. The natural history and habit of the sheep may be re-written with great advantage. Naturalists give a very erroneous account of the sheep, particularly the Count d' Buffon; the sheep is not the stupid animal he asserts it to be, and I know what he says to be decidedly untrue; instead of stupidity it is an excess of sensibility. I could name many facts of their intelligence if it was not too long. The horse has the longest memory, the dog and the elephant remember the most things, but the sheep has an excellent memory. A flock of sheep may be drilled under a good shepherd, and brought to the strictest discipline of any army. As I am not going to write an essay on sheep, I will mention such things as I think will aid to carry out the important views of the Institute. One thing is certain, *if the Almighty reduced us to one animal, and commanded us to choose, we should be obliged to choose the sheep!* If the Institute would employ some intelligent man, to collect the facts to write the life of the celebrated Mr. Bakewell, and all his improvements on sheep, it would be of as much real practical use as all the essays in the world. He was the prince of farmers! He not only transformed and created a new breed of sheep, but he excelled in all he undertook. He grew the best cabbages; he made the best ditches and fences; he bred the finest horse in the world, which was shown to the king, and all over England. It is not an easy matter to write a good life of Bakewell, but it is highly worthy the care of the Institute. The Institute, and the man of science look over the whole globe to see how we can improve the sheep and his wool. I shall pass in review some of the finest sheep on the globe, not known in the United States, to see if the Institute can select any

breed worthy of their patronage, or to combine a new cross to form a valuable animal, or to create a new kind of wool that will form a new branch of manufacture. What the genius of a Bakewell accomplished, may we not do over again in another form? Nearly every country in Europe has its particular race; these again are subdivided into infinite varieties, as in the United States. 1st. The Belgian, Flemish and Flanders sheep, are nearly five feet in length, and weigh 200 cwt., came originally from the East Indies; are remarkable for their fecundity, producing several lambs in the year; the wool is middling. From their great size and breeding qualities, a cross with the pure Merino ram must be valuable. 2d. Central and Western Asia have long been looked upon as the cradle not only of the human race, but of the original stocks whence sprung most of our animals which in a domestic state serve to the use of man. Several years ago the attention was drawn in England to a particular breed of sheep in the *Nepaul* country, well worthy the attention of men who wish to improve their fleecy flocks, which is the *Huntah*, a large, tall, breed, with slender, compressed, spirally twisted horns, and short narrow tails, though now naturalized in the Kachar, and is of Trans-Himalayan origin. They have from four to five horns; its wool is superb; at Calcutta this kind of sheep may be heard of, and the name of the merchants who could procure them is given. They appear to resemble in some respects, the Wallachian sheep, which has, I believe, been mentioned by some of our agricultural journals, but I think does not resemble in the wool.

Here is a breed of sheep, large size, superb wool, ready made; the horns are objectionable. 3d. The Suabia, also termed *Zaubel-schauf*, found in different parts of Suabia and Franconia, it is small, lambs twice a year, produces two pounds of fine wool, like floss silk. Such a breed of sheep might lead to some valuable new manufacture, and the quality of wool increased perhaps without losing its silky quality. 4th. The sheep of Fezzan are a most singular race, and it is strange some have not been imported. They are as large as a calf of two or three months old. Instead of wool they have a kind of hair, and though their flesh has not the fine flavor of our best mutton, yet it is very good eating. They are remarkable for their docility and attachment to their masters. They have a large fat tail like the Cape sheep, weighing eight or ten pounds. This animal crossed with the largest Lincolnshire rams, clipping twenty pounds of coarse wool,

would form a valuable article for coarse wear, and everlasting for waistcoats, cloaks, &c., making camblets of considerable value. This animal, from his immense size, docility, and the great amount of fat he would yield, perhaps in point of profit, if the cross was judiciously made, would vie with any sheep we have. Want of space prevents my entering into details.

I am now going to mention sheep that I think really worthy of the investigation, discussion, and attention of the Institute, and what is singular, this breed is the most numerous in the world. 5th. The Steatypoja, or fat tail, is the most abundant, and the largest sheep in the world. The body of the ram swells gradually with fat towards the posterior where a solid mass of fat is formed on the rump. 6th. A variety raised by the Bucharian Tartars and Persians, a mixed breed of the long and fat tailed sheep. The Bucharian Tartars have a very valuable traffic with the furs of the lambs of this variety, which are exquisitely fine and beautiful. The same variety is raised by the Persians, but I must cut off what I wish to say, and refer you to the work of Dr. Pallas' "*Spicilegia*," "*Zoologica fasciculus undecimus*." Berlin, 1776. In Russell's account of the history of Aleppo, you will find an account of these sheep, and also in "Shaw's Travels," and at the Cape of Good Hope, they bring sheep to be shipped there whose tails weigh from twenty-five to thirty pounds. These works will be found in the public libraries, and if there is no translation of the works of that accurate zoologist, Dr. Pallas, the Institute could not do better than to have all translated relative to those sheep, of which there are four varieties. The work of the Abbé Demavent, in his history of Africa, describes this kind of sheep at Cape Guardafui. All the sheep are white with the exception of their faces, which are black, small heads, handsome breed, broad fat tails. Their great size, quantity of wool, easily improved, and the immense amount of tallow they will give, near 60 lbs., this breed skilfully crossed must be valuable. The mutton of the fat tail sheep is very good. Dr. Pallas mentions a fact as accurate, which may be doubted. He says the ewe of this kind of sheep couples clandestinely with the domestic he-goat, producing a fleece of wool and hair. I have kept goats for a great length of time, and know others that have done the same and never saw an attempt of the kind, and I could mention facts against it of whole countries. The fat tailed sheep is, says Osbeck in his journey to China, bred throughout the whole of that empire. These

sheep appear to have existed in the time of Moses, and are the sheep mentioned in Leviticus, viii., 25, 9, 19. If the Institute will have the work translated as regards the sheep from Dr. Pallas's work, and other researches made about them, it will form a very interesting essay. These sheep in their fat alone when killed will pay more than the whole produce of any of the sheep we now possess, and a single cross of the fat rumped ram must lay on a layer of fat. These sheep weigh 150 lbs. Whether Mr. Bakewell got the fat of his sheep by such a cross I cannot say, but there is no doubt it can be done. One thing we may congratulate ourselves in, our country sheep being free, when properly placed, from the host of diseases they are subject to in Europe. Virgil in his Georgics mentions the foul diseases sheep were subject to. In our prairies, after a strict inquiry, I find the sheep are subject to no disease, though neglected, ill-treated, and half starved in winter. I would wish to make a few remarks on this head, but am warned to close. The United States labors under two fatal prejudices which prevent her progress in fine wool and sheep raising. The mass of the people will not eat mutton, and they prefer a coarse wool to make their clothes of. A gentleman says he got a backwoodsman's wife to buy some grade wool who made her husband's clothes. She was asked a long time after as to the result. She replied, "It makes just this difference; when I made my husbands' clothes from the coarse wool, two suits last him a year; when I make them of fine wool three suits last him two years." There is a work much needed, which perhaps at the suggestion of the Institute some scientific man may write. Re-write the natural history of the sheep, follow no old errors, do him the justice he merits; write the history of all the original breeds of sheep in the whole world, from the Argali down to the Zetland sheep, the smallest in the world, unless the Shetland. Give beautiful portraits of each original breed; say nothing of the varieties until the original pure breeds are disposed of; let it be copious, minute, correct.

(PAPER A.)

Wool Mattresses, the best material and the only one that ought to be used for bedding for all ages and for all ranks. The object of this paper is to prove that Wool Mattresses make the cheapest and most economical bed that can be made, for men, women, and children, for all ages and sexes, and that a man recovers much sooner from fatigue on such a bed, than on any other.

The human species are obliged to repair by sleep and repose, the fatigues of the body, every sixteen hours at least, so that even the laborious pass more than a third of their lives in bed; the idle, fashionable, luxurious and women, nearly half their time; and children in health sleep most of their time. The Romans used to sleep in the middle of the day, and had particular rooms distinct from their bedrooms, where they slept in the day; and in Italy, and in southern countries, that practice is still continued. Therefore it is of the utmost importance what kind of a bed we lie upon: the harder the bed in reason, the healthier we are.

Wool Mattresses give this hardness or firmness, at the same time yield sufficiently from the pressure of our bodies to form a luxurious and agreeable bed, and wool does not make marks on the skin, or relax, as other bedding. In the old accounts of the court of England, there is a charge on the journey for so many bundles of clean straw for the Queen's bed. Then it was said, when men slept on straw, with a log of wood for their pillows, they were men of iron; and now they sleep on feather beds, and *down pillows*, they are *men of straw*. All great men, warriors, heroes, &c., who have made a noise in the world, have always slept on a hard bed, from Charles the XII down to Napoleon.

Chemically, wool is the best for bedding; wool, flannel, and all substances made of wool, keep our bodies warm; they are composed of a rare and spongy mass, the fibres of which touch each other so slightly that the heat moves slowly through their interstices, and wool retains its heat better than other materials, and does not strike so cold. People may be convinced of the impropriety of lying too long in bed, by knowing that a sound man, in one night of seven hours sleep, generally perspires fifty ounces, or three pounds avoirdupois, or four pounds Troy weight; and we cannot wonder at that, since there are above three hundred thousand millions of pores in the body of a middle sized man, and that in the last hours of sleep we perspire most, hence the impropriety and weakness occasioned by lying too long in bed, particularly a feather or soft bed, and the necessity of lying in a comparative hard, elastic, flat bed; such is a Wool Mattress with a hair mattress under, to lay on in summer.

In France, Wool Mattresses are generally adopted, consequently you never meet with a bad bed there. I have travelled all over France, and

never met with a bad bed. And a very recent American traveller of great observation, mentions on his removal from England to France, that he found the French beds delicious and healthy, because the beds are Wool Mattresses.

Mode of making Wool Mattresses.—The first thing to constitute a good healthy bed, is to have it absolutely flat, therefore all bedsteads should have wooden laths instead of sacking, which always gives and forms a hollow. The wool is to be carded by hand, all knots and extraneous matter taken out. The great point is to make it thick enough; the best bed I ever slept on in my life had sixty pounds of wool in it, but the bed was a very large, extra size. Half that quantity will make a small bed, but if you wish to sleep luxuriously, yet hard, do not stint the wool, this makes all the difference; it lasts forever. The covering is to be washed once a year, the wool is carded and a few pounds of wool added, and the bed is sweet and new. However luxurious he may lie ordinarily, let any man have a good wool mattress made, and let him ride forty or fifty miles and thoroughly fatigue himself, and after reposing on it, he will know the value of such a bed.

It is an object of vast national importance to increase the consumption of our wool. The population of the United States is, say 20 millions; dividing these into families of five each, gives four millions of families. Should we allot three beds to each family of 30 pounds each, it would require 360 millions of pounds of wool. Now, estimating the number of sheep at 34 millions, and their clip at 80 millions pounds a year, it would require more than the whole clip of the United States for four years to furnish the beds. These are facts worthy of being promulgated by the Institute, independent of the immense benefit to the health of our citizens. Let men try a wool mattress, particularly married men, and report to the Institute.

(PAPER B.)

Flannel manufactures of wool; home market for Wool, Flannel.—Of the importance and necessity of all the world wearing it, and of the benefits arising from the manufacture of flannel in the United States, and the consumption of that kind of wool that cannot find a market abroad.

Every thing that encourages our woolen manufactures is of the greatest importance. Everything that increases our home consumption of wool is of national importance. In this changeable and rigorous climate in winter, if all were to wear flannel next their skin, particularly narrow chested and delicate females, it would be of the greatest benefit to their health, and save them many a fit of sickness.

If this flannel is manufactured, as it ought to be, in the United States, it will not only increase our woolen manufactures, but create a large home market for our wool, and such wool as cannot be sold abroad. When we consider how cheap the English sell their Welsh flannel, it ought to stimulate our manufacturers. I must however say that I never purchased any flannel made in the United States equal to the real Welch flannel, or that did not shrink, or that wore near so long as the English flannel. The English flannel has a nap on both sides, which renders it warm and soft, and it washes soft to the last. The domestic flannel that I have purchased, washes harsh, and the wear is not near so agreeable as real Welch flannel; but surely our people can overcome all these difficulties, and they can make as good flannel as the best Welch.

Considering the great national benefit it would be in point of health if all would wear flannel next to their skin. I propose to repeat Dr. Black's observations, because I think they cannot be mended, and if generally known may induce their adoption.

"It is well known that woolen clothes, such as flannels, worn next the skin, promote insensible perspiration; may not this arise principally from the strong attraction which subsists between wool and the watery vapor which is continually issuing from the human body? That it does not depend entirely upon the warmth of that covering is clear, for the same degree of warmth, produced by wearing more clothes of a different kind, does not produce the same effect. The perspiration of the human body being absorbed by a covering of flannel, it is immediately distributed through the whole thickness of that substance, and by that means exposed by a very large surface to be carried off by the atmosphere, and the loss of the watery vapor which the flannel sustains on the one side, by evaporation, being immediately restored to the other, in consequence of the strong attraction

between the flannel and the vapor. The pores of the skin are disencumbered, and they are continually surrounded with a dry and salubrious atmosphere. It is astonishing that the custom of wearing flannel next the skin should not have prevailed more universally ; it is certain it would prevent a number of diseases, and there certainly is no greater luxury than the comfortable sensation which arises from wearing it after one is a little accustomed to it. It is a mistaken notion that it is too warm a clothing for summer ; it may be worn in the hottest climates, at all seasons of the year, without the least inconvenience arising from wearing it. It is the warm bath of a perspiration confined by a linen shirt wet with sweat, which renders the summer heats of a southern climate so insupportable. But flannel promotes perspiration and favors its evaporation, and evaporation as it is well known, produces positive cold."

I can vouch for the truth of every word of this. I wear the same kind of flannel waistcoats in summer as I do in winter, with sleeves. When I take exercise, and perspire, and my body and flesh are always cool, and in part, to wearing flannel next my skin, I owe the fact of never having had the fever and ague in this western country, which is full of it.

All this may appear trivial, and salutary rules are not regarded, but it is of the utmost importance. Say that 15,000,000 of our people wear flannel ; three flannel waistcoats to each : 45,000,000 of waistcoats at only two yards each, (not enough with sleeves,) 90,000,000 of yards would be required for flannel waistcoats. Only old people, delicate women and children, above all, consumptive people, ought to wear flannel drawers as well as flannel waistcoats, next their skin. Men who drink spirituous liquors to increase the animal warmth, should wear flannel instead, and " keep the body warm and the head cool."

(PAPER C.)

It would be of great utility if experiments could be made for the sole purpose of discovering what is the kind of food and treatment that will increase wool on each sheep individually, whether it is nitrogen, gluten, or what is it? The experiments must be made regardless of all expense or trouble; the thing is to discover the substance that will increase the quantity of wool. Should it be too expensive

as a common food, chemistry is so far advanced that we may then find a substitute.

The following experiments, if correctly made and accurately noted down, will no doubt throw a light on this important subject, perhaps bring to light the proper food to produce an increase of wool:

Let twelve gentlemen, rich enough to think nothing of any expense or trouble in carrying it out, (I wish I had the means, I should consider it the greatest pleasure to try for the discovery,) let each gentleman take twelve sheep, that is twelve lots of twelve sheep each, and feed them scientifically with the sole view of finding out what food and treatment will increase the quantity of wool. The only preliminary precautions to be taken are, that no sheep must be selected whose individual amount of wool clipped last year from each sheep is not accurately known. There is no difficulty in this; there are sufficient enlightened flockmasters who keep an accurate account of their clips, and who no doubt would lend their sheep for experiment. The next point is, after these gentlemen are ready, and have made up their minds as to their general food, they must state it to the Institute, (twelve months is the time the experiment ought to last,) that if two or more men should hit upon the same treatment, they may be requested by the Institute to vary it so that each lot may be fed with different food. It is quite superfluous to give any directions to such scientific gentlemen as may undertake this, to make the discovery will be a great honor. It is to be hoped that Mr. Pell will take one lot. With the necessary quantity of food that a sheep requires to keep up the animal heat comfortably without effort, then he is at his ease, and thrives and heats the oxygen he consumes, it is the excess of food beyond this point that creates wool, fat, muscle, &c. This ought never to be forgotten. If one lot could be conveniently kept in a dry deep cellar in winter, in demi-obscurity, with equal temperature, it ought to be tried. Mules are sleek and fat in the coal mines of Pennsylvania, seven hundred feet below the surface. I wish to impress strongly on the minds of gentlemen trying these experiments not to be deterred from giving any kind of food because it is not the custom to give such things to sheep; food the most bizzare and extraordinary should be tried. In these experiments the point is to go out of the beaten track of prejudice, and try everything

Still-slop has been found to increase the wool one pound per head, and pay all expenses of purchase and carting. Sheep have the organ of taste in a very extraordinary degree, having the papillæ very large and long, they can distinguish flavors with infinite accuracy, and Malphigie's description of the papillæ, copied by almost all of the anatomists, was taken from the tongues of sheep. One lot ought to be covered over with an open kind of holland from the neck to the tail. Some people may laugh, but this is not new, but very old.

Varro, the learned Roman, in his "De Re Rustica," says, sheep were covered over with a leather covering to improve the wool, and the wool growers of Podolia and the Ukraine, particularly in the province of Astrachan, have a peculiar method of turning wool into fur. The lamb after a fortnight's growth is taken from the ewe, nourished with milk and best herbage, and wrapped up as tight as possible in a linen covering, which is daily moistened with warm water, and is occasionally enlarged as the animal increases in size. In this manner the wool becomes soft and curly, and is by degrees changed into shining and beautiful locks. It is called Astrachan.

Twenty-five years ago this was the most fashionable lining and trimmings for cloaks a dandy could wear, who took it for fur. One lot should certainly, during the winter be fed on cooked food. One lot should have a daily ration of rye in meal and grain, with and without salt. This grain has been said to develop more than any other grain the growth of wool, though neither rye, barley or oats, possess any gluten. Yankee beans ought to be tried on one lot. Shearing twice on one lot. Consider that even six ounces increase of wool per head, on 30,000,000 of sheep, is immense. We have much to learn, and if twelve men will undertake each a lot, keep accurate daily accounts, and report to the Institute, I have little doubt something important will be discovered, at all events that another year's experiment will succeed.

LECTURES.

LECTURE ON THE STEAM ENGINE.

By Professor JAMES RENWICK, of Columbia College, N. Y.

It is hardly necessary to say that I felt highly complimented by the invitation of the American Institute, to deliver a course of lectures. The invitation was therefore cheerfully accepted, and the hope was at first entertained that leisure might be found to prepare and present to this audience, something novel in the way of science, or capable of being considered popular by brilliancy of illustration. These hopes have not been fulfilled. Engagements, at all times paramount, have interposed, and I am compelled to appear before you with what is to me, and I fear may seem to you, a hacknied subject.

Twenty years since, at the opening of the lectures of the Athenæum, I performed my share of one of the winter's duties, by a series of lectures upon the *steam engine*. A few years subsequent, and in connection with the duties of a professor in Columbia College, a more full and extended course was undertaken. In these a full discussion of all the physical and chemical principles involved in the operation of the steam engine, was attempted. At this epoch, even elementary works on this subject were rare, practical treatises were wholly wanting; no lecturer had yet travelled through the Union dispersing popular information, and whether in the more popular form of the first series, or the more scientific plan of the latter, the lecturer had the advantage of touching at every step upon principles understood by few, and facts unknown to the greater portion of his audience.

If the publication of numerous works in the interval have blunted curiosity, and lessened the general interest in the novelty of the subject, I have personally a still greater difficulty to contend with, for
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all that I have collected to illustrate the matter before us, has long been before the public in a printed form. The latter circumstance, however, is the very one which has enabled me to fulfil my pledge, and without further apology I shall proceed to the performance of my task.

Whatever may have been the original condition of the human species, whether it dragged out a painful existence in a state of utter barbarism and was driven by hard necessity to seek arts, without which we should consider life too hard a burthen to bear, or whether, as is the more reasonable hypothesis, man derived from his creator with his breath, a knowledge of the things most essential to his comfort, we have no record that he was at any time ignorant of the use of fire. The grovelling schools of philosophy, that could not scan the high destinies of the immortal soul of man, have been puzzled to draw the line of distinction between him and the brute creation; and in one of the most ingenious of their attempts, he has been defined "a cooking animal." However, we may smile at the distinction, it is not the less sound, and in the general habit of the human race to subject their food to preparation by fire, is to be found the source of their knowledge of steam, and of course the origin of the steam engine. No one has ever seen water boiled in a covered vessel who has not occasionally remarked the lid thrown off with violence. There is the first germ of the identical force we now apply to so many important uses. Nor can it have escaped the most inattentive observer, that the whole liquid is often projected in bubbles from the mouth of the vessel. Here we have the cause to which most of the dangers attending the use of steam are owing.

It is not intended to trouble you with an account of the innumerable attempts which were made to apply the force rendered apparent in the first of the foregoing facts, to practical purposes. Modern researches have proved beyond all question that most of the facts whose discovery has been the boast of modern science, were known in remote antiquity, insulated indeed, and detached from any system of knowledge, but still in a form capable of practical application. But while we, moderns seek, and often successfully, to apply such discoveries to the improvement of the physical condition of our race, and while such new fact is either made use of by its discoverer for the purpose of profit, or blazoned abroad as the basis of an honest fame, the

knowledge of natural phenomena attained by the ancients, was carefully hidden from the vulgar eye, and we find the traces of its existence only on the record of the means by which they endeavored to sustain the influence of gross and debasing superstitions.

One instance will suffice to illustrate this point. The lightning which Franklin drew from the clouds, and proved to be the same agent which we can now call into action in many simple ways, as an agent which we have recently learned to employ as a messenger, more swift than was fabled of the rainbow clad errand bearer of thundering Jove, was habitually employed by the Etrurian augurs in the early ages of Roman history, to create and sustain the popular delusion to which they owed their influence.

Rejecting then all notice of the various deceptions recorded to have been practiced by pagan priests, in which we cannot fail to recognize the action of steam; rejecting also the reputed magic of the middle ages, and a few abortive attempts to apply steam to useful purposes in more modern times, we come to the era of the two men who have been respectively claimed by the two great civilized nations, France and England, as the inventors of the engine, Papin and the Marquis of Worcester. Even of these our limits will permit only a casual notice. Both employed, and at dates sufficiently near to each other to allow of a reasonable doubt as to their respective priority, the direct pressure of high steam. The English nobleman's discoveries in steam, were indeed made public, but in a manner purposely mysterious. The work in which they are recorded is from the number of the plans it comprises, called "The Century of Inventions," and such is the guarded manner in which the notices are drawn up, that they have in no case furnished any aid to those who have attempted to follow the same course, and yet so completely are they identified that no sooner has some inventor succeeded by direct means in obtaining the same result, than it becomes possible to deprive him of the merit of priority, by citing the words of the Marquis of Worcester. Of his hundred inventions, one was at once found to correspond with a part of the action of the first steam engine that was brought into open use. Two other of these enigmas have since been solved, and they embrace the steamboat and the locomotive.

We might at this day have been in doubt whether the whole of the series were not the mere dreams of an enthusiast, were it not that

within the last thirty years a manuscript has been discovered in Italy recording the travels of a prince of the family of Medici, in which there is recorded his visit to an engine erected by the marquis of Worcester, at Chelsea, and an account of its operation. In respect to Papin, it need only be said, that his plans for using steam, with the exception of one of the parts, the safety valve, have had no influence upon the progress of the engine. His partisans have, however, endeavored to shew that the form of an apparatus which he intended to set in motion by gunpowder, was copied in that modification of the steam engine, from which by successive improvement we derive those which are now in universal use. The merit of the actual introduction of steam as a motive power for useful purposes is due to neither of these parties, but to an Englishman of the name of Savary.

By the successive steps which have been just described, the steam engine became an instrument of vast importance, and from the circumstance that the use of it was for many years almost wholly confined to Great Britain, it had an influence upon the destinies of that country, and through it upon those of the whole globe, that is as extraordinary as it is undoubted. Those who look into the sources of national wealth and strength, may well question whether the firmness of Pitt, and the constancy of the cabinet trained in his school under the saddest reverses, the naval skill of Nelson, or the warlike abilities of Wellington would have been sufficient to avert the downfall of Britain, but it is certain that all united would have been too feeble to have brought about the destruction of the power of Napoleon, had it not been for the invention of the watch maker of the college of Glasgow. By the application of his engine to manufacturing purposes, the lost labor of the myriads drawn from the pursuits of civil life to fill the ranks of the army and man the navy, was more than supplied; new sources of prosperity were opened, providing money wherewith to meet taxation, increasing in geometric ratio, and fill up loans to any extent that the ministry might judge it expedient to ask for.

By further improvement, which it would be tedious to recount, the double acting low-pressure engine became automatic, or completely self-acting. It supplied itself with water in exact proportion to its expenditure of steam, regulated and governed its own speed, registered its own motions, oiled and cleansed its own parts, brought new surfaces forward to supply those worn off by friction; it made the

consumption of combustible exactly proportioned to the quantity of work, and regulated the supply of fuel necessary to its own action. It was also fondly believed that it was sufficient to provide for its own safety from all danger. Painful experience has shown that the last desideratum was not accomplished, and although engines are still in habitual use in which all the other qualities are fully exhibited, some of them are now sacrificed in those of modern construction, to the attainment of others admitted to be of more importance. We would refer more particularly to that most important change in the manner of using the condensing engine by which it is set in action by steam of high pressure, which is cut off before the cylinder is filled, and thus permitted to act by its expansive force instead of its simple pressure. In this mode the duty of a given engine is increased nearly five fold, and this even with a saving of fuel. In this way also has the speed of our steamboats been increased to more than twice that which theorists assigned as the limit of their velocity. To attain these advantages, the original self-acting feeding apparatus has been laid aside, and although many substitutes have been prepared and even successfully applied, none of them have come into general use. With this mode of using steam, by which its power is so much extended, the illustration of the progress of the engine ceases, and the intent of the present lecture is accomplished.

The great body of this audience has been familiar with the name of the steam engine from infancy, and has been in the habit of witnessing some of its most important applications from the earliest age. But there may be those present, who with him who addresses, first heard its name associated with the ridicule cast upon Livingston and Stevens for fancying it capable of taking a vessel to Albany, and who if they wished to see a steam engine in successful operation must have taken a journey to Philadelphia, then the labor of two days. The latter portion of my hearers will feel with me, that the applications of the steam engine which have been developed under our own eyes, constitute a series of triumphs of human ingenuity, surpassing all that the imagination of poets could conceive, and realising the wildest dreams of fiction. The history of the steam engine in fact passes from the regions of mechanical plodding to those of the imagination. The faculty is the same whether it be devoted to the discovery of brilliant mechanical combinations or the elaboration of poetical imagery; the inventions of the mechanics of the

present day have more than realised the conceptions of the poets of olden date, with the advantage of having given form and substance to the airy imaginings of the latter.

The horse of Epeus, the forms that "moved and breathed in animated gold," to support the halting steps of Homer's Vulcan, nay, even the self moving chariot of Milton, although he conceived it to demand the workmanship of Almighty power, but faintly shadow forth the substantial forms of the locomotives of Rogers, Dunham and Norris. Nautical legends tell that in the stormiest seas which ever beat upon the southern cape of Africa, a phantom ship is seen, urged by preternatural power in the very teeth of the tempest, and pursuing a steady course in opposition to the most violent winds, or the most impetuous swellings of the ocean.

Who has seen a steamboat contending successfully with the sudden fury of the summer gust, or the more lasting rage of the autumnal hurricane, or urging its way through the most rapid tide, but has recognized more than this wild and mysterious legend ?

May we venture to go a step further into the regions of imagination ?

Oriental fancy has pictured to itself an air borne car, the fortunate possessor of which, was enabled to assume the revered character of the prophet of the Mahomedan faith ; and the great epic poet of England, desired "to call up him who left half told," the story of "the wondrous horse of brass on which the Tartar king did ride." It will be said indeed that neither our present form of steam engine, or any which has yet been imagined, is capable of such exploits, but who shall venture to say, when we have seen a bushel of coal made to do thirty times as much as it did in the times of our fathers, when we live in hopes to receive replies from Europe to our letters in the course of a fortnight, and talk of travelling to Oregon in four or five days, that steam may not, in fulfilment of the prediction of the poet, not only

Drag the slow barge and whirl the rapid car,
But, on wide waving wings expanded bear
The flying chariot through the field of air.

CONVERSATIONAL MEETINGS.

REMARKS OF R. L. PELL, of Pelham, Ulster Co., N. Y.

WATER.

Mr. President—Our subject this evening is water, its composition and general properties; by consulting Webster and other authors, I am enabled to give you the following facts:

In order to understand the nature of it, we must examine its constitution chemically. Water was for centuries considered one of the natural elements, and consequently incapable of being separated so as to form other substances, and were it not for that most important of all sciences, chemistry, it would still be so considered; such is not the fact, however; water is a combination of two kinds of gas, and they are called hydrogen and oxygen; the latter is one of the component parts of the atmosphere we are constantly inhaling, and without which, we could not exist a moment. Hydrogen is an inflammable substance, and one that is used artificially to illuminate our streets, in the form of hydrogen gas, which may be produced from sulphuric acid and zinc; it forms combustion by uniting with the oxygen of the atmosphere, and water is the result of this union.

Water must not be considered a mere mechanical mixture of the two gases, oxygen and hydrogen—as is proved by placing the two in a vessel, water will not be formed; to obtain water, the two gases must be united chemically, by burning them in a dry vessel, and perfectly pure water will be generated, precisely equal in weight to the two gases consumed. This water may again be separated into oxygen and hydrogen, proving beyond the possibility of a doubt, that it is a compound body, and that it cannot be considered as one of the elements. Water is always composed of 8 parts of oxygen and 1 of hydrogen; this rule never, under any circumstances, changes, whether the water be hard or soft. If you place a quantity of water in a tub, and set it in the air, it will lessen hourly in quantity, and finally entirely disappear, you will naturally say it has “dried up.” Such is not the case, being volatile, it has mingled insensibly with the atmosphere in the form of vapor; not a single particle of water has been lost by this operation, the whole of it will again return to the earth

in the form of rain. Water may be converted into steam at a temperature of 212 degrees, and it cannot be made any warmer in the air if exposed, for the reason that the heat is carried off by the steam generated. Close it in a tight vessel, and a much greater degree of heat may be obtained. When water boils in an open metal vessel, you may plunge in a thermometer, and it will rise immediately to 212 degrees, but no higher; if you let it remain until all the water evaporates, still, the thermometer will remain at 212 degrees; in glass it boils at 214 degrees.

The boiling point of turpentine is 316°, mercury 662°, and ether 96°. You would naturally suppose that steam was moist, as you see it rising from the spout of a tea-kettle. Such is not the case; on the contrary, it is as long as it remains in the state of steam perfectly dry—it is only when returning to its natural state, water in a condensed form, that moisture is apparent—when you observe steam issuing from the waste pipe of a steam boat, if you follow it with your eye, you will discover as soon as it comes in contact with the cold atmosphere, it is converted into water and returns in that shape to the deck. If you put a kettle of water on the fire for the purpose of heating it, and after it has been on the fire for a short time, place your hand in the top you will find it cool; thrust it to the bottom and you will discover the water is warm: the reason is that the water at the bottom becomes heated first, and then expands and becomes lighter, and ascends gradually to the surface, and other layers in turn take its place at the bottom, until the whole mass becomes hot and boils. Water never becomes congealed until the atmosphere is indicated by the thermometer as down to 32°—when the air is excluded from the water it freezes, forming a bulk much greater than the water frozen, consequently it is lighter by $\frac{1}{8}$, and rests on the surface. The expansion of water when freezing is so great, that no vessel can be made strong enough to resist its power. I have often been asked why I am so particular in ploughing lands that I intend for summer crops, in the fall, instead of spring—it is for this very reason, that the soil during winter is disintegrated and most thoroughly pulverized by freezing. I could not by twenty years harrowing in the spring, place the ground in the same tilth, that one winter's frost will. Water not only becomes solid in ice, but in numerous other cases by combining chemically with bodies, for instance when you slack lime, you use water for that purpose, the water at once unites itself to the

lime, and a dry powder results, which contains the water consolidated, and is called chemically hydrate—all water contains air, which is shown by the fact that fish live in it—if a small pond containing fish be thoroughly frozen over with thick ice the fish will die; persons have denied this fact. I have proved it on my farm. I have constructed eight artificial fish ponds, in which I have a vast variety of fish, and have on several occasions lost them when the ponds have been frozen. I am now obliged to have holes made in them daily to admit the air. Place water under a receiver of an air pump and exhaust it, you will then see the air rushing out of the water in thousands of bubbles—the air may be expelled by boiling, likewise,—by calculation it has been found that 100 cubical inches of spring water afforded two cubical inches of air, which consists of ten per cent. of carbonic acid, and the balance atmospheric air, that is oxygen and nitrogen. Rain water contains 35 per cent. of air, and 1 per cent of carbonic acid gas, fresh snow water has no air. Water by nature is never perfectly pure, being a powerful solvent it soon becomes contaminated with any unclean substance it may come in contact with. The only way to obtain comparatively pure water is to get snow in some field remote from the habitation of man and melt it. The principal reason why water presents such different qualities, in different districts, is that all earths contain in different quantities certain adventitious substances of which the water being a great solvent immediately imbibes and imparts to the taste. It is a singular fact that even by distillation you can effect no change in water, you can only separate it from its impurities, it becomes colorless, transparent, and void of taste, and will rapidly dissolve soap, and will last an indefinite length of time pure if sealed up in a bottle, the fresh taste usually perceptible in spring water, is caused by a small quantity of carbonic acid gas always present.

The purest water next to the distilled, is rain water, which is formed by evaporation from the land and sea, the sun by his heat induces this vapor to rise—it at once ascends into the upper regions, where by the cold it becomes condensed in the form of mist, which we see as clouds, as long as the temperature remains agreeable they float about in the air, until they come in contact with electricity, or changeable currents of cold wind by which they are condensed into almost perceptible drops, which unite one with another, and they descend to the earth's surface in the form of rain; in its passage through the air it imbibes carbonic acid gas and ammonia, both of which it yields to

plants, and that is the reason why rain water is so much better than spring or well water for agricultural purposes. Carbonate of ammonia, muriatic and nitric acids have been discovered by chemists in rain water collected before it reached the earth's surface.

In hot climates it becomes filled with animalculæ as it falls from the clouds, and soon after smells strong from their decay. If you desire to collect rain water for drinking and culinary purposes, your roof should be made of slate, as that is almost the only substance entirely insoluble in water; if lead, zinc or copper is used the water becomes impregnated with the oxides of these metals; in tile roofs the water becomes impregnated with lime. Rain water if made pure by filtration, is the softest and most agreeable of all water, there are various ways of filtering, one is to let water percolate through some porous stone or other porous substance, too fine to admit any extraneous substance contained in the water, likewise through sieves, sponges, flannel, &c., but of all materials charcoal is undoubtedly the very best. It prevents putrefaction, absorbs all the gaseous matter that is generated, and impedes decomposition; unwholesome and offensive water by being placed in a cask charred in the inside will become transparent and agreeable to the taste, pass brandy through charcoal dust and it will become white, it will likewise whiten the syrup of sugar. Nature filters water by means of sand beds. The inhabitants of large towns in Europe have imitated nature in this respect, and the use of sand is common for that purpose.

The source of well and spring water is rain, when it falls upon high ground it filters through the soil as long as it is sufficiently porous to permit it, and is finally stopped by rock, or some impervious substance, as clay, &c., at length by the pressure of the water, or through some crevice it finds its way to the earth's surface, and thus forms a spring, the water of which is impregnated by any saline substance it may have met with in its passage through the ground, so that we have not unfrequently met with brackish wells and springs; the consequence is, spring water can never be pure, as it must invariably in its course, dissolve some matter deteriorating its quality, as nearly all soils contain one or more of the following salts, viz: glauber salt, common salt, sulphate of magnesia, sulphate of soda, muriate of soda, &c.

You can immediately distinguish between hard and soft water by the use of soap which contains an alkali, in soft water it will dissolve

without curdling, hard water curdles it at once; for the reason that in its passage through the earth it has dissolved one or more of the neutral salts which it holds in solution. If for instance, that salt has been sulphate of lime, which consists of sulphuric acid and lime; and soap consists of alkali, either soda or potash, oil or fat, the alkali uniting with the fat forms soap, part of which is soluble in water, viz., the alkali, but the fat is insoluble, when soap is placed in water containing this sulphate of lime, which has a stronger attraction for the alkali than it has for its own lime, releases the lime and takes possession of the alkali, consequently the fat is immediately released, and the soap separates into its original parts, alkali and fat, and is no longer soap. I would not desire you to understand that the soap is of no use in the hard water, for to a certain extent you can wash with it, for the reason that water rarely dissolves so large a portion of sulphate of lime, as to entirely destroy the action of soap; pure water is not injured by coming in contact with lime stone, carbonate of lime, chalk, &c., for the reason that they are insoluble in water.

If such was not the case, we should have very little pure water in the world, as this species of earth is one which abounds in nature. Do you know the reason why all your boilers and tea-kettles become coated with a hard whitish substance, which in time if your housekeeper does not frequently examine will clog up the spout in such a manner that the water will not issue forth? it is because water in its percolation through the earth, comes in contact with carbonic acid gas, which it has a great affinity for, and instantly absorbs, thus holding an abundance of this species of lime in solution; by boiling the water the carbonic acid is driven off, and the lime is converted into a bi-carbonate. If the boiling is continued for some time this bi-carbonate is reduced to common carbonate, which is not at all soluble in water, and this substance is precipitated to the bottom of your tea-kettle, where it remains unacted upon, and daily increases in bulk, until it finally chokes the spout. If any of you desire to find out whether your wives are good housekeepers or not, examine on your return home to-night their tea-kettles, and if you discover a hard crust of uninviting matter lining the same, be assured a recent examination has not taken place.

Thus carbonic acid gas issues from the earth constantly in large quantities. I visited while in Italy the famous Grotto del Cane, a few miles from Naples, where this gas rises in such quantities as to

kill a dog in five minutes. A dog is kept by the custode of the grotto to be experimented upon for the benefit of visitors; he is left in the grotto about two minutes, when he becomes perfectly insensible, he is then taken out and after fifteen minutes exposure to the atmosphere recovers animation. There is also a valley in the east called the valley of death. Birds flying over it are immediately killed, owing to the quantity of carbonic acid gas constantly issuing from it. There are springs again which contain a vast amount of salt, so much so indeed that forty gallons of the water will yield one bushel. The salt springs in Onondaga county employ thousands of laborers in the manufacture of salt, and yield 4,000,000 of bushels in a year. It is obtained by evaporating the water in three different ways: 1st. by the sun; 2d. by artificial heat, and 3d. by boiling.

You have all heard of petrifying springs, which will convert any substance thrown into them to stone. This is a vulgar notion, and altogether erroneous. There are no such springs; the petrified wood and other matters found turned into stone, have become so at a date entirely beyond the calculation of man.

The modern springs said to possess this petrifying quality do not convert wood to stone, but simply encrust it with carbonate of lime, analogous to the fur on the bottoms of your tea kettles; it will present the appearance of a petrification. Remove this deceptive covering and you will find the wood unchanged.

Soft spring water, as it is called, is rain water which has passed through the earth without coming in contact with any soluble substance capable of injuring its purity; even then it will not be as pure as it would if caught before it comes in contact with the earth's surface.

River water chiefly derives its source from mist and rain; the mist consists of immense masses of vapor, which we call clouds; when they come in contact with hills and mountains, they are condensed and form rills; these unite themselves to streams, and the streams collect and form lakes in the valleys between mountains; when full, their outlets, aided by springs, rains, and melted snow, compose our immense rivers. Ice and snow water are nearly pure, for the reason that any saline impurity they may have possessed before freezing, is by that process separated. Take salt water and freeze it and the ice will be almost fresh; by the process of freezing, water becomes as lifeless as

if boiled, so much so indeed, that fish cannot live in it, until after long exposure to the atmosphere; it is flat to the taste, and does not quench thirst as well as rain or spring water.

Salt Water.—It is one of the wonderful acts of God, that the seas were made salt; had they been fresh, they would have been stagnant, and mankind could not have existed on the face of the earth; every substance, vegetable or animal, which entered them would have become putrid; these matters now are impregnated with lime, and the consequence is the seas remain pure. Vessels at sea might always obtain fresh water by boiling; steam arising from boiled salt water is always fresh, and if condensed in the usual way, would afford an ample supply of fresh water at all times. Monsieur de Bougainville, in his voyage round the world, derived great assistance from this mode of obtaining fresh water; and Dr. Irving received in the year 1770, a parliamentary reward of \$25,000, for introducing the plan into the British navy.

Stagnant Water.—Any water in a state of perfect rest, is stagnant, whether it be a lake 10,000 miles in circumference, or a pond ten feet square, if it has no outlet and consequently no current, it is stagnant, and by exposure to the elements will become filled with aquatic insects, animalculæ &c.; they die, and their exuvixæ putrify and contaminate the fluid, inducing a spontaneous growth of minute plants, some of which are only discernable with a magnifying glass, and serve as food to these countless myriads.

Mineral Water.—Water is called mineral when it contains different salts in sufficient quantities to render it unfit for domestic purposes, when chlorides of calcium and magnesia occur in water, they make it necessarily bitter; as for example, the Dead Sea in Palestine abounds with these salts, and is very bitter. The springs in Epsom, England, abound with sulphate of magnesia or epsom salts, when iron is discovered in water, it is called chalybeate, and is exceedingly astringent and austere to the taste. The mineral waters of Tunbridge and Cheltenham in Great Britain, and our various springs in Ballston and Saratoga, are chalybeates.

MORTAR.

BY R. L. PELL, of Pelham, Ulster Co., N. Y.

In the days of Italy and of Greece, mortar was not used in constructing temples; the immense stones made use of rendered it unnecessary, as their weight was sufficient to keep them in their places. In ancient Babylon, bitumen was sometime employed to cement the stones of their houses together, remains of which are said to exist even now. The cement made use of by the ancient Romans must have been superior to any we now have in use, for example: The emperor Trajan built a bridge across the river Danube, which cannot possibly be too much admired, though all the works of Trajan were magnificent in the extreme, this bridge far exceeded them all. The length was 4770 feet, the piers were distant from each other 170 feet, and there were 20 of them, built of square stone laid in cement, each pier was 150 feet high and 60 feet in breadth. The most extraordinary feature to be observed is that the river at this point is exceedingly rapid, very deep, and has a soft, muddy bottom. The emperor Adrian afterwards succeeded in breaking down the arches, but the piers he could not destroy, and they there remain a monument of the ingenuity of Trajan and his architect, as well as the strength and lasting properties of his mortar. I infer from the fact that among the ancient Grecian nations the arch was not understood, that they did not know the use of mortar and the antediluvians certainly could not as no accounts have been handed down to us, that they inhabited houses composed of more than one apartment, or of different stories. The idea was first given to mortals, I imagine, by the deity; when he commanded Noah to construct his ark of different stories and rooms. If rooms, one above the other had been known by the antediluvians, God would have given Noah a perspective view of the rooms and stones as he did Moses.

The Chinese probably knew the use of mortar long before the Greeks and Romans, and consequently the use of the arch, in fact, no modern nations even at this day, have been able to equal them in this respect, notwithstanding we boast of elegance and magnificence. The Chinese have constructed a bridge of a single arch, the materials

laid in mortar, the span of which is six hundred feet, and the height of the arch 750 feet. The middle arch of the Westminster bridge, London, is only 76 feet span, and springs from about two feet above low water mark. The span of the middle arch of Black Friar bridge is 100 feet, built in the elliptical form, and the most stupendous bridge in all Europe is that over the Tave in Glamorganshire, consisting of one arch, the segment of a circle, the diameter of which is 175; the chord of the segment is 140 feet; and the height 35 feet. You will, therefore, observe how far superior the Chinese arch is to the best in enlightened Europe, by whom the Chinese are called a benighted people. Our common mortar is composed of lime, sand and water, mixed until it forms a paste, which dries and becomes almost as hard as stone, and the strength of our walls is in proportion to the excellence of the lime or calcareous earth from which this substance is made, being usually combined with other matters; it is good in a ratio equivalent to its detachment from these combinations, which is effected by exposing the lime stones to a very strong heat, in what is termed a lime kiln; these stones consist of lime combined with carbonic acid gas in a solid state, and before being burned is termed carbonate of lime; when red heat is applied the gas immediately flies off, and the substance left is termed quick lime, and is soluble in water, when water is applied with a view of slacking it, it cracks and falls into fine powder, a portion of the water escapes in the form of steam, but much of the largest quantity combines with the lime and becomes solid, and forming a substance called by chemists hydrate of lime, and by masons slacked lime.

Limestones affording lime appropriate for mortar are of two kinds, viz: those which consist of nearly pure carbonate of lime; and those which consist of carbonic acid and a portion of iron, magnesia or clay. That made from the first is far superior, as it dries at once when exposed to the air, and becomes very hard, and will not soften in water applied when perfectly dry; if, however, water is kept in contact with it before perfectly dry, as in drains, &c., it will never set or harden, and is therefore not used for hydraulic purposes. Limestones containing clay, especially if they are ferruginous, are termed when burned, hydraulic or water lime, and when mixed with sand sets even under water. Builders are generally of opinion that the best lime is obtained from the hardest limestone; this is not so, however. Lime made from porous, soft stone, absorbs from the atmosphere the

carbonic acid gas which it lost in burning much more rapidly than the lime made from compact, fine grained stone, and if used as soon as mixed, makes better mortar than the hard stone lime, as was proved by the late Lord Stanhope, of England.

When mixing mortar, the fine angular silicious sand, free from earthy substances should be used ; that obtained from the shores of rivers is probably the best. If your sand contains much earth, the mortar will be sensibly weakened. Sea-sand is not good for the reason that it contains salt, which has the effect of attracting moisture, and preventing the walls from becoming dry. The more labor you expend on the manufacture of a bed of mortar, in mixing and thoroughly incorporating the particles of lime and sand, the better will be its quality. Our mortar is very inferior to that which was made twenty years ago even in this city, and the reason is that the same care is not generally taken in the selection of materials, the labor and proportions of lime and sand. It is not a rare thing to see a raw emigrant from the Emerald Isle, mixing mortar in our streets without further instruction than this from his employer : " There is a heap of sand, there twenty barrels of lime, and here the pump ; I wish you to make it into mortar." He who never saw lime before, makes the mortar, and what is it but an inferior substance, incapable of binding either brick or stone. The strongest water cement now known is made of a substance called *pozzuolana*, which is found near a city named Pozzuoli, not far from Naples, in Italy. It consists of volcanic ashes, concreted into a rusty mass, and when mixed with sand and lime it sets quick, and becomes as hard as any stone under water. There are numerous moles and foundations for summer residences, built in the bay of Baird, by the Romans, who made use of this substance.

The Dutch have something similar, which they call *trass*, made from porous lava found at Andernach, on the banks of the river Rhine, in Germany. It is ground fine and mixed with mortar, and makes a valuable cement for hydraulic purposes.

Grout is mortar made liquid by an admixture of water and is poured over brick work when recently laid : it finds its way into all the interstices, and cements the whole into a comparatively solid mass, when great strength is desired this course should always be pursued.

The Chinese probably knew the use of mortar long before the Greeks and Romans, and consequently the use of the arch, in fact no

modern nation even at this late day, have been able to equal them in this respect, notwithstanding we boast elegance and magnificence. The Chinese have constructed a bridge of a single arch, the materials laid in mortar, the span of which is six hundred feet, and the height of the arch seven hundred and fifty feet. The middle arch of Westminster bridge, London, is only seventy-six feet span, and springs from about two feet above low water mark. The middle arch of Black Friars bridge is one hundred feet span, built in the elliptic form. And the most stupendous bridge in all Europe is that over the Tave, in Glamorganshire, consisting of one arch, the segment of a circle, the diameter of which is one hundred and seventy-five feet; the chord of the segment is one hundred and forty feet; and the height thirty-five feet. You will therefore observe how far superior the Chinese arch is to the best in enlightened Europe, by whom the Chinese are called a benighted people. Our common mortar is composed of lime, sand and water, mixed until most as hard as stone.

ACOUSTICS.

By R. L. PELL, Pelham, Ulster Co., N. Y.

Mr. President:—Acoustics is the science which teaches us the true nature of sound, and it is divided into diacoustics, which explains the properties of sound, and the catacoustics, which treats of sound reflected. Sound is the information which we first receive of external things by the sense of hearing. The ancients imagined that sounds were beings wafted through the atmosphere and felt by our ears. In the early days of philosophy sound was considered a separate existence wafted through the air to our organ of hearing, affected in the same manner that our nostrils are affected by the sensation of odours, Zeno says “Hearing is produced by the air which intervenes between the thing sounding and the ear.” The air is agitated in a spherical form, and moves off in waves, and falls on the ear in the same manner as the water in a cistern undulates in circles when a stone has been thrown into it.

There is no doubt but the air is the vehicle of sound, which has been established by the fact, that a bell rung in a vacuum emitted no sound, when one rung in the air condensed gave a loud sound. Solid

bodies are also vehicles of sound; many experiments are mentioned by Kircher and others on the communication of sound through solid bodies, such as masts, yards, and other long beams of dry substances with similar results. Dr. Monro has published a particular account of very curious experiments on the propagation of sound through water, in his dissertation on the physiology of fishes; so it now appears that air is by no means the only vehicle of sound. In 1760, Cotunni published his important discovery that the labyrinth or inmost cavity of the ear in animals is completely filled with water. This after some contest, has been completely demonstrated, and admitted by all. Place a small bell under water in a large glass vessel, and strike it, the sound will be heard as if the bell had been struck on the vessel's side. The manner in which the nerve of the ear is exposed to the vibration of sound is uncertain, and has long occupied the eminent anatomists of Europe. The descriptions that have been given by Comparette, Scarpa, Monro, Camper, and many others are replete with singular discoveries and valuable information.

By the experiment of some philosophers it has been found that sound travels at the rate of 1142 feet in a second, about thirteen miles in a minute; its progress is the same even against the wind, except that its velocity is diminished. Its progress can be readily calculated; for instance, measure a certain distance between two points, and let a gun be fired at one end, and the interval between the flash and the report will give the precise time the sound required to travel the distance. If you observe a flash of lightning, and desire to know how far the cloud is from you, time the number of seconds between the lightning and the following report of thunder, and allow 1142 feet for each second. "Derham has proved by experiment that all sounds travel precisely at the same rate. The sound of a gun and the striking of a hammer are equally swift in their motions; the softest whisper flies as swiftly, as far as it goes; as the loudest thunder. The strength of sound is greatest in cold air, and least in warm. The whispering gallery is constructed on the principle that after it has been reflected from different places may be brought together in one point, will be more audible there than even at the place from whence it proceeded. An echo is a reflection of sound striking against some object. There is a most extraordinary echo at a fortress near Louvain, in Flanders. If a person sang, he heard his own voice only, without any repetition; whereas those who stood at a distance, heard the

echo but not the voice; and with surprising variations, sometime soft, sometimes loud, sometimes near, and then distant. There is an echo near the city of Rouen in France, very similar to this. M. Sauvear made some experiments on organ pipes, and found that a body which gives the greatest harmonic sound, and that the shrillest sounding body vibrates 51,100 times in a second. Colladon states that by plunging a thin tin cylinder a few feet under the water, closed at the lower end, and open at the upper end, he was enabled to hear the sound of a bell struck under water at the distance of nine miles. You may take a stick of timber 400 hundred feet long, and place a man at one end with orders to scratch it with a needle, and although the sound will not be perceptible to him, the man at the other end will hear it most distinctly. Parry's account of his third expedition to the north pole states, that two persons could converse with each other across Port Bowen harbor, a distance of one mile and a quarter. Derham relates with regard to distances, that guns fired at Cailseroom were heard across the south extremity of Sweden as far as Denmark, a distance of nearly 119 miles. Doct. Kearns, a Swedish physician mentions that he heard guns fired at Stockholm, a distance of 180 miles. The firing of cannon in a fight at sea between the Dutch and the English in 1672, was heard at Shrewsbury in England, 200 miles distant from the scene of battle.

PROCEEDINGS

OF THE

NATIONAL CONGRESS OF FRUIT GROWERS.

ITS ORIGIN AND OBJECT.

Among the varied difficulties attending the cultivation of fine varieties of fruit, there have perhaps been none of more serious a nature than the want of accurate and well defined knowledge of their flavor, productiveness and habits of growth. There had existed, also, in the catalogues of various commercial establishments, many varieties of fruits, whose novelty, or perhaps the mere fact of their existence, compelled these establishments to cultivate them to a certain extent, but many of which were worthless, and many more uncertain in their character. To remedy these evils, and to purge the list of all worthless fruit, had long been a desideratum with nurserymen and fruit growers; and for some three years past much correspondence had taken place upon the subject. The time, however, for action, was not thought to have arrived until the past summer, when the Massachusetts and Pennsylvania Horticultural Societies, and the American Institute, corresponded upon the subject, and the latter offered to provide a room and other conveniences for the accommodation of a Fruit Grower's Convention, to be held in the city of New-York in October.

Pursuant to these arrangements a circular was issued calling a convention; and all the horticultural and agricultural societies in the Union were invited to send delegates. Circulars were also issued, requesting all fruit growers to bring or send to the convention, specimens of their fruit.

At the time specified the convention met at the lecture room of Clinton Hall, in New-York, the body of which was filled with tables loaded with the finest specimens of fruit, from Massachusetts, Connecticut, Rhode Island, Vermont, New-York, New-Jersey, Virginia, Ohio, Kentucky, &c., the contributors of which will be found named in the course of the proceedings.

It being intended that this should be a National Convention, and more general in its character than any of the state conventions which already exist, it was thought that very little more would be accomplished the present year than the organization of the body, and the appointment of committees to investigate and report another year. That much more than this was accomplished, will be seen by the proceedings. In the confusion and want of system necessarily resulting from a primary organization, several valuable communications which were read to the convention, were either not handed to the secretaries, or were mislaid, and contributors or delegates may occasionally find their names omitted.

To these the secretaries can only express their regret at the omission, and a confidence that another year everything will be so well arranged as to render unnecessary any omissions of this nature.

This record of the proceedings of the Convention will be sent to every delegate and to every agricultural and horticultural society, as far as can be ascertained. Those who may be omitted can obtain copies by application to the Secretary of the American Institute, at New-York, who has kindly offered to take charge of any business of this nature as long as the Convention shall be held in New-York. When in session elsewhere, the horticultural society of the place in which it may be held will extend the courtesy and attention now kindly given by the American Institute.

The Convention was called by the following Circular :

GREAT NATIONAL CONVENTION OF FRUIT GROWERS.—It is proposed to hold a Central Convention of Fruit Growers and Pomologists in the City of New-York, during the great Fair of the American Institute.

The Institute having kindly offered to aid in carrying out said views, the Convention will hold its sessions at Judson's Hotel, No. 61, Broad-

way, New-York, commencing Tuesday, the 10th of October, at 10 o'clock, A. M.

Among the objects to be proposed at this Convention are the following :

To compare fruits from various sources and localities, with a view of arriving at correct conclusions as to their merits, and to settle doubtful points respecting them.

To assist in determining the synonyms by which the same fruit is known in different parts of the country.

To compare opinions respecting the value of the numerous varieties already in cultivation, and to endeavor to abridge by general consent, the long catalogue of indifferent or worthless sorts at the present time propagated by nurserymen and fruit growers.

To elicit and disseminate pomological information, and to maintain a cordial spirit of intercourse among horticulturists.

In order to increase as much as possible the interest of the Convention, the delegates are requested to bring with them (carefully packed and labelled, so as to present them in good order) specimens of all fruits grown in their vicinity that may be worthy of notice, together with a small branch and leaves of each variety, if possible.

In localities where any well known old varieties flourish particularly well, specimens are desired, accompanied with memoranda respecting the soil upon which they grew, and their culture.

Every contributor is respectfully requested to make a list of his specimens, and present the same with his fruits, in order that a report of all the varieties entered may be submitted to the Convention as soon as possible after its organization.

The undersigned, in behalf of the Societies they represent, respectfully solicit delegations from all Horticultural and Agricultural societies of our country, and of such number of persons as each Society may deem expedient to send.

Societies will please transmit at an early day a list of the Delegates they have appointed, to T. B. Wakeman, Esq., the Corresponding Secretary of the American Institute, New-York.

MARSHALL P. WILDER,
SAMUEL WALKER,
EBENEZER WIGHT,

Committee of the Massachusetts Horticultural Society.

THOMAS HANCOCK,
WM. D. BRINCKLE,
THOMAS McEWEN,

Committee of the Pennsylvania Horticultural Society.

R. S. FIELD,
H. W. S. CLEVELAND,
JAS. VAN DEVENTER,

Committee of the New-Jersey Horticultural Society.

ELI IVES,
A. S. MONSON,
GEO. GABRIEL,

Committee of the New-Haven Horticultural Society.

PHILIP SCHUYLER,
R. T. UNDERHILL,
CHAS. HENRY HALL,

Committee of the Board of Agriculture of the American Institute.

NEW-YORK, July 28th, 1848.

The Convention assembled in compliance with the terms of the foregoing circular, but in a more convenient room, in the city of New-York, in the Lecture Room of the Mercantile Library, (Clinton Hall,) on Tuesday, the 10th day of October, at 11 o'clock, A. M. The Hon. James Tallmadge called the meeting to order, and stated its objects as set forth in the circular issued by the several associations with which the matter had originated. On motion of M. P. Wilder, of Massachusetts, the Hon. James Tallmadge was appointed President, and S. B. Parsons, Secretary *pro tem.* The following gentlemen were then, on motion, appointed by the Chair a committee to report to the Convention a list of officers for its government: Samuel Walker, of Massachusetts; Thomas Hancock, New-Jersey; S. B. Parsons, Long Island; J. W. Hayes, New-Jersey, and Thomas Allen, Missouri.

It was moved and carried that a Vice-President be chosen from each state represented in the Convention.

On motion, the Chair appointed a business committee, consisting of J. J. Thomas and A. J. Downing, of New-York, and R. S. Field, of New-Jersey.

On motion, the Chair also appointed the following gentlemen a committee to receive and report a list of fruits exhibited, and the names of contributors : Chas. Downing, Jas. Wilson and James Hogg, of New-York ; Josiah Lovett and R. Manning, of Massachusetts ; Thos. P. James, of Pennsylvania, and H. W. S. Cleveland, of New-Jersey.

The following committee was appointed to receive and report to the convention the names of all who are in attendance either as delegates or otherwise : Peter B. Mead, of New-York ; W. B. Kingsbury, of Massachusetts, and S. B. Parsons, of Long Island.

The Committee of Arrangements who had prepared the Hall for the Convention, requested to be relieved from further duty, which request was granted ; and, on motion, the Chair appointed a committee to take charge of the hall and arrange the fruit on the table.

This committee consisted of Messrs. Graves, Parsons, Valk, Bowditch and Gustin.

The Convention then adjourned till next day at 9 o'clock, A. M.

SECOND DAY.

The Convention assembled, pursuant to adjournment, at 9 o'clock, Hon. James Tallmadge in the chair.

The minutes of the proceedings of yesterday were read and approved. The Committee on the nomination of officers presented the following report :

For President,

MARSHALL P. WILDER, of Massachusetts.

Vice-Presidents,

W. D. BRINCKLE, Pennsylvania.

R. T. UNDERHILL, New-York.

H. H. CRAPO, Massachusetts.

H. W. S. CLEVELAND, New-Jersey.

A. S. MUNSON, Connecticut.

THOMAS ALLEN, Missouri.

A. McINTOSH, Ohio.
 RUSSELL MATTISON, Vermont.
 YARDLEY TAYLOR, Virginia.
 LAWRENCE YOUNG, Kentucky.

Secretaries,

S. B. PARSONS and P. BARRY, of New-York, and
 GEO. W. DEACON, of New-Jersey.

The report was unanimously accepted, and, on motion, a committee was appointed to wait upon Col. Wilder and conduct him to the chair. Gen. Tallmadge, with a few remarks, introduced the President to the Convention.

Col. Wilder responded in a pertinent and appropriate manner, for the honor conferred in electing him to preside over the deliberations of the Convention. He said, they had assembled for the free interchange of experience and opinions, and for the better diffusion of correct pomological knowledge throughout our country. That it was particularly gratifying to notice so large an attendance of members; but, that amidst such congregated learning and intelligence, he had not the vanity to believe he could offer any remarks which would be of much instruction or interest. That many gentlemen had come from remote sections, and he knew how anxious they were to proceed to business. He should, therefore, not tax their patience with a speech, but at once invite attention to the objects for which the meeting had been convened, viz :

“To compare fruits from various sources and localities, with a view of arriving at correct conclusions as to their merits, and to settle doubtful points respecting them.

“To assist in determining the synonyms by which the same fruit is known in different parts of the country.

“To compare opinions respecting the value of numerous varieties in cultivation, and to endeavor to abridge by general consent the long catalogue of indifferent or worthless sorts at the present time propagated by nurserymen and fruit growers.

“To elicit and disseminate pomological information, and to maintain a cordial spirit of intercourse among horticulturists.”

Pomology, he said, had not until recently received the attention its importance demanded ; but that a new impulse and a general interest was now pervading the community on this subject, and that it was only necessary to give this a right direction, to make it productive of great good to ourselves, and of permanent advantage to those who may come after us.

The committee appointed to receive the names of delegates and others in attendance at the Convention, reported as follows :

DELEGATES.

Massachusetts.

Massachusetts Horticultural Society.—M. P. Wilder, B. V. French, Samuel Walker, Robert Manning, A. J. Downing, Josiah Lovett, A. D. Williams, W. B. Kingsbury, Azell Bowditch.

Worcester Horticultural Society.—John Milton Earle.

Berkshire County Horticultural Society.—Asahel Foote, Samuel Goodrich, Sewell Sargent.

New-Bedford Horticultural Society.—James Arnold, H. H. Crape, W. P. Jenny, J. B. Burgess, J. D. Hall.

Northampton Agricultural, Horticultural and Floricultural Club.—J. Stebbins Lathrop.

Hampden County Horticultural Society.—C. W. Hartwell, D. C. Brewer, B. K. Bliss.

Massachusetts State Agricultural Society.—J. C. Gray.

Berkshire Agricultural Society.—Asahel Foote, R. H. Campbell.

New-York.

New-York State Agricultural Society.—B. P. Johnson, James Hall.

Rensselaer County Agricultural Society.—William Buswell and Amos Briggs.

Albany and Rensselaer Horticultural Society.—Herman Wendel, V. P. Douw, J. M. Ward, L. Tueker, B. B. Kirtland, James Wilson, Wm. Thorburn.

Buffalo Horticultural Society.—R. L. Allen.

Long Island Horticultural Society.—Gabriel Winter, S. B. Parsons, W. W. Valk, R. B. Parsons, G. W. Huntsman.

Westchester County Agricultural Society.—Jas. Hay, H. W. Tibbets, Wm. L. Ferris, D. K. Sherwood, Henry Wood, P. B. Mead.

- Greene County Agricultural Society.—A. Marks, A. T. Vanslycke.
 American Institute.—R. T. Underhill, W. R. Prince, Henry Meigs.
 Aurora Horticultural Society.—John J. Thomas.
 Genesee Valley Horticultural Society.—P. Barry, Jas. H. Watts.
 Clinton County Agricultural Society.—Jonathan Battey.
 Queens County Agricultural Society.—G. R. Garretson, Geo. D. Kimber, Wm. R. Prince, S. B. Parsons, Wm. J. Youngs, D. F. Manice, Chas. N. Doane, Jas. Fleet, and A. G. Carl.
 Fishkill Landing Farmers' and Gardeners' Club.—J. S. Rumsey, J. W. Knevels, D. Brinkerhoff, Chas. Dubois, W. S. Verplanck, F. A. De Witt, Townsend Glover.
 Onondaga Horticultural Society.—Thomas A. Smith, A. Thorp, Wm. B. Smith.
 Orange County Agricultural Society.—A. J. Downing, Charles Downing, A. Saul, Robert Dennison, Lindley M. Ferris, Charles Hamilton, Samuel W. Corwin.
 Oneida County Agricultural Society.—Abiram Mills.
 Dutchess County Agricultural Society.—Edwin Haviland, John R. Comstock.
 Washington County Agricultural Society.—Ahira Eldridge, Edward Long.
 Cortland County Agricultural Society.—John Miller.
 Columbia County Agricultural Society.—E. G. Studley.

Pennsylvania.

- Pennsylvania Horticultural Society.—Thomas Hancock, W. D. Brincklé, Alan W. Corson, R. Hare, R. Buist, Thos. P. James, Saml. C. Ford.
 Westchester County Horticultural Society.—Ezra Stokes.

New-Jersey.

- New-Jersey Horticultural Society.—H. W. S. Cleveland, Ira B. Underhill, George B. Deacon, Samuel Allinson, jr., Isaac Pullén, Marcus L. Ward, J. Vandeventer, Thomas Lavender, J. W. Hayes.
 Princeton.—J. S. Van Dyke.
 Delaware County Institute of Science.—George Smith, S. Morton, J. Painter, A. B. Williamson.
 Essex County Institute.—J. W. Hayes, J. B. Lindsay, Jos. Cross, William Rankin, Moses B. Cœ, S. Harrison, Linden A. Smith, Gideon Ross, L. J. Harris.

Morris County Agricultural Society.—D. J. Canfield, Samuel J. Gustin.

Delaware.

Delaware Horticultural Society.—J. W. Thompson, Ed. Tatnall.

Kentucky.

Louisville Horticultural Society.—Lawrence Young.

Missouri.

St. Louis Horticultural Society.—Thomas Allen.

Virginia.

Virginia Horticultural Society.—Yardley Taylor, of Loudon county.

Ohio.

Cleveland Horticultural Society.—A. McIntosh.

Connecticut.

Connecticut Natural History Society.—Erastus Smith, Henry W. Terry.

New-Haven Horticultural Society.—A. S. Munson, J. J. Walter, J. T. Gerry, E. E. Clark, N. F. Thompson, George Gabriel, C. B. Lines.

Hartford County Agricultural Society.—Salmon Lyman.

Litchfield Agricultural Society.—Robbins Battell, W. H. Thompson.

Rhode Island.

Rhode Island Horticultural Society.—L. C. Eaton.

Vermont.

Bennington Agricultural Society.—Russell Mattison.

Persons, many of whom were contributors of fruits, and desirous of taking a part in the proceedings of the convention, were invited to be present, and the following gentlemen took their seats :

Isaac Buchanan, New-York.

Alexander Smith, “

James Hogg, “

H. Ripley, “

A. C. Bradley, “

D. B. Sherwood, “

A. C. Van Epps, “

T. Fowkes, “

John J. Boyd, New-York.
 Seba Smith, "
 Isaac Bloodgood, "
 J. M. E. Valk, Flushing, New-York.
 Joseph H. King, " "
 Jno. Wilcomb, " "
 Wm. J. Wilcomb, " "
 Andrew Frazer, Long Island, "
 E. P. Disosway, Staten Island, "
 M. Lapaugh, Rensselaerville, "
 E. Merriam, Lewis co, "
 Jno. G. Bergen, Brooklyn, "
 D. P. Gardner, Hastings; "
 Henry Sheldon, Tarrytown, "
 H. Holcomb, Watertown, "
 Hon. Hugh Maxwell, Rockland, "
 Jno. Wood, Long Island, "
 Fred'k Olmsted, Staten Island, "
 W. S. Carpenter, Westchester co. "
 W. A. Jackson, Caldwell, Essex co., New-Jersey.
 George Olmstead, E. Hartford; Connecticut.
 David Miller, jr., Carlisle, Pennsylvania.
 S. W. Carwin, So. Middletown, Connecticut.
 Solon Dike, Massachusetts.
 C. M. Hoyey, Boston, Massachusetts.
 Ward Stafford, Bloomfield, New-Jersey.
 Thos. W. Stafford, " "
 Sheldon Moore, Kensington, Connecticut.
 Caleb Roscoe, Sing-Sing, New-York.
 S. Lyman.
 W. T. Cook, New-Bedford, Massachusetts.
 Seymour Whitney, Stratford, Connecticut.
 Henry Keeler.
 J. N. Bates, Barre, Massachusetts.
 J. Smith; Wyndham.
 Charles Sears, Monmouth co., New-Jersey.
 Mr. Kellog, } N. A.
 Mr. Guillaudeu, } Phalanx.

John J. Thomas, from the business committee, then reported the following rules to govern the business of the Convention :

1. During certain hours of the session the special fruit committee shall be in sitting to examine fruits.

2. All examinations of fruit presented during the present sitting of the Convention, shall be made in the committee room, where statements to the committee must also be made

3. The result of their labors shall be made known to the Convention in successive reports during its sittings.

4. In all the discussions which may arise in the Convention, no member shall speak more than five minutes, nor more than twice on the same subject.

The report was accepted. On motion of A. J. Downing,

Resolved, That a *special fruit committee* be appointed for the examination of fruits.

The Chair appointed the following gentlemen :

A. J. Downing, Thomas Hancock, J. J. Thomas, Robert Buist, Robert Manning, Dr. Herman Wendell, Josiah Lovett, L. C. Eaton, and George Gabriel.

Wm. R. Prince offered a resolution, calling for the appointment of a committee to prepare and report to the Convention a list of a certain number of the various fruits that could be recommended for general cultivation. After some remarks from Mr. Prince, explanatory of the objects of his resolution, it was, on motion, referred to the special fruit committee.

The committee appointed to receive and report a list of the fruits exhibited, reported as follows :

Aaron D. Williams, Roxbury, Massachusetts.

Pears, 10 varieties.

Samuel Allinson, Mercer, New-Jersey.

Apples, 8 varieties.

Morris & Stokes, Westchester, Chester county, Pennsylvania.

Plum, 1 variety.

Apples, 9 varieties.

Herman Wendell, Albany, New-York.

Pears, 10 varieties.

Wilson, Thorburn & Teller, Albany, New-York.

Pears, 8 varieties.

Apples, 2 do.

Isaac Sherman, Milton, Ulster County, New-York.

Apples, 9 varieties.

Pear, 1 do

Quince, 1 do

Jonathan Batty, Keeseville, New-York.

Apples, 29 varieties.

Robert Washburn, Rensselaer County, New-York.

Apples, 1 variety, seedling.

J. C. Hastings, Clinton, Oneida County, New-York.

Apples, 16 varieties.

Pears, 1 do seedling.

Thomas Hancock, Burlington, New Jersey.

Apples, 18 varieties.

Pears, 14 do

Quinces, 2 do

Peaches, 2 do

Colonel Hodge, Buffalo, New-York.

Apples, 27 varieties.

Pears, 19 do

Charles Downing, Newburgh, New-York.

Apples, 21 varieties.

Plums, 2 do

Grapes, 3 do

W. S. Young, Oyster Bay, Queens County, Long Island.

Apples, 30 varieties.

David Miller, Jr., Carlisle, Pennsylvania.

Apples, 22 varieties.

John W. Knevels, Fishkill Landing, New-York.

Plums, 1 variety.

Apples, 4 do

Peaches, 1 do

Pears, 6 do

Hickory nut, 1 do

A. Bryant & Sons, Buffalo, New-York.

Apples, 39 varieties.

Pears, 17 do

S. A. Barnett, Milton, Ulster County, New-York.

Plums, 4 varieties.

- Apples, 18 varieties.
Pears, 4 do
Quince, 1 do
- Craft & Smith, Milton, Ulster County, New-York.**
Apples, 1 variety.
- Roswell L. Colt, Paterson, New Jersey.**
Grapes, 9 varieties.
- J. M. Earle, Worcester, Massachusetts.**
Pears, 13 varieties.
Apples 10 do
- Robert Manning, Salem, Massachusetts.**
Pears, 110 varieties.
Apples, 36 do
Quinces, 3 do
- Charles Dubois, Fishkill Landing, New-York.**
Plums, 1 variety.
Apples, 6 do
- D. W. Brinckerhoff, Fishkill Landing, New-York.**
Apples, 8 varieties.
Pears, 1 do
Plum, 1 do
- Nathaniel Halleck, Milton, Ulster County, New-York.**
Apples, 4 varieties.
Pears, 4 do
- Samuel G. Newlin, Fishkill Landing, New-York.**
Apples, 9 varieties.
- John W. Knevels, Fishkill Landing, New-York.**
Plum, 1 variety.
Peach, 1 do
Pear, 5 do
Apples, 4 do
Nuts, 3 do
- H. W. S. Cleveland, Burlington, New Jersey.**
Apples, 2 varieties.
Pears, 1 do
- W. R. Prince & Co., Flushing, Long Island.**
Pears, 35 varieties.
Apples, 10 do

- Peaches, 8 varieties.
 Chestnuts, Prince's Hybrid.
 Cydonia Japonica.
- A. S. Munson, New Haven, Connecticut.**
 Apples, 1 variety.
 Pears, 5 do
- George Gabriel, New Haven, Connecticut.**
 Pears, 6 varieties.
 Grapes, 1 do
- A. Smith, New Jersey.**
 Seedling apples.
- George Bristol, Kirtland, Oneida County, New-York.**
 A box of fruits.
- W. L. Ferris, Westchester, New-York.**
 Apples, 1 variety.
 Pears, 12 do
- W. A. Jackson, Caldwell, New-Jersey.**
 Apples, 6 varieties.
- E. G. Studley, Claverack, New-York.**
 Apples, 11 varieties.
- R. Buist, Philadelphia.**
 The genuine Tripoli grape.
- J. S. Lathrop, Northampton, Massachusetts.**
 Apples, 6 varieties.
- H. N. Langworthy, Rochester, New-York.**
 Apples, 13 varieties.
 Pears, Swan's Orange or Onondaga.
- Ira Harrison, Orange, Essex County, New Jersey.**
 3 varieties of apples.
- D. F. Manice, Hempstead, Long Island.**
 Pears, 19 varieties.
 Grapes, 4 do
 Chestnuts, 3 do
 Quinces, 2 do
- John J. Thomas, Macedon, New-York.**
 Apples, 31 varieties.
 Pears, White Doyenne.
- T. S. Rumsey, Fishkill Landing, New-York.**
 Apples, 23 varieties.

- Peas 20 varieties.
Plums, 8 do
- B. G. Barker, Plymouth, Michigan.**
Apples, 25 varieties.
Quinces, 2 do
- Yardley Taylor, Loudon county, Virginia.**
Apples, 5 varieties.
- W. S. Carpenter, Harrison, New-York.**
Apples, 1 variety.
- Thomas A. Smith, Syracuse, New-York.**
Pears, 5 varieties.
Apples, 14 do.
- Thorp & Smith, Syracuse, New-York.**
Pears, 4 varieties.
Apples, 27 do.
- H. W. Sargent, Fishkill Landing, New-York.**
Grapes, 9 varieties.
Peaches, 2 do.
Plums, 2 do.
Pears, 15 do.
- M. P. Wilder, Boston, Massachusetts.**
Pears, 120 varieties.
Apples, 4 do
- B. V. French, Braintree, Massachusetts.**
73 varieties of apples.
- Ehwanger, Barry & Rowe, Rochester, New-York.**
44 varieties of apples.
1 do pear.
- J. Shedaker, Burlington, New-Jersey.**
Apples, 8 varieties.
- Josiah Lovett, Beverly, Massachusetts.**
Pears, 8 varieties.
- William B. Kingsbury, Roxbury, Massachusetts.**
Pears, 4 varieties.
- Norman Porter, Berlin, Connecticut.**
Pears, 11 varieties.
Apples 1 do
- S. Lyman, Manchester, Connecticut.**
Apples 5 varieties.

- S. Walker, Roxbury, Massachusetts.**
Pears, 60 varieties.
- George B. Deacon, Burlington, New Jersey.**
Apples, 25 varieties.
- Moody & Penfield, Niagara County, New-York.**
Apples, 7 varieties.
- Edward A. Newton, Pittsfield, Massachusetts.**
(By Thomas Allen.)
Apples, 1 variety.
Pears, 1 do
- A. T. Van Slyke, Coxsackie, New-York.**
Apples, 19 varieties.
Pears, 9 do
Quinces, 1 do
- Isaac Pullen, Hightstown, New Jersey.**
Apples, 22 varieties.
- Henry H. Crapo, New Bedford, Massachusetts.**
Pears, 14 varieties.
- John Howland, New Bedford, Massachusetts.**
Pears, 2 varieties.
- William Swift, New Bedford, Massachusetts.**
Pears, 2 varieties.
- William P. Jenny, Fairhaven, Massachusetts.**
Pears, 8 varieties.
- James Arnold, New-Bedford, Massachusetts.**
Grapes, 9 varieties.
- A. McIntosh & Co., Cleveland, Ohio.**
Apples, 53 varieties.
Pears, 43 do
Quinces, 3 do
Medlar, 1 do
- F. R. Elliot & Co., Cleveland, Ohio.**
Apples, 31 varieties.
Pears, 12 do
- John Perkins, Moorestown, New-Jersey.**
Apples, 7 varieties.
- James Fleet, Queens County, New-York.**
Seedling Pears.

A. Foote, Berkshire, Massachusetts.

Apples, 15 varieties.

Pears, 3 do

H. W. Terry, Hartford, Connecticut.

Apples, 6 varieties.

Sewall Sargent, Stockbridge, Massachusetts.

Pears, 4 varieties.

James H. Watts, Rochester, New-York.

Apples, 1 variety, Northern Spy.

Samuel H. Corwin, South Middletown, New-York.

Apples, 4 varieties.

A. Marks, Durham, Greene County, New-York.

Apples, 6 varieties.

Quince, 1 do

C. S. Phelps, Oswego, New-York.

Pears, 11 varieties.

Apples, 1 do

Peaches, 1 do

Filberts, 1 box.

W. D. Brinckle, Philadelphia, Pennsylvania.

Apples, 8 varieties.

Pears, 2 do

and seedling Chestnuts.

G. W. Hartwell, Springfield, Massachusetts.

Pears, 6 varieties.

W. S. Carpenter, Harrisontown, New-York.

Newtown Pippin Apples.

J. W. Hayes, Newark, New-Jersey.

Apples, 27 varieties.

Pears, 8 do

George Olmsted, East Hartford, Connecticut.

Apples, 8 varieties.

Thomas H. Rochester, Rochester, New-York.

Pears, White Doyenne.

L. A. Ward, Rochester, New-York.

Pears, Gray Doyenne.

J. W. P. Allen, Oswego, New-York.

Pears, 15 varieties.

- A. Bronson, Oswego, New-York.
Pears, 5 varieties.
Grapes, 1 do
- Frederick R. Buell, Litchfield, Connecticut.
Apples, 33 varieties.
- R. T. Underhill, Croton Point, New-York.
Grapes, 4 varieties.
- Charles H. Tomlinson, Schenectady, New-York.
Pears, 11 varieties.
Apples, 2 do
- William Buswell, Troy, New-York, for S. Norton.
Pears, 1 variety.
- Job B. Whipple, Union Village, New-York.
A seedling Apple.
- Mr. McCulloch, Kirtland, New-York.
Apple Quince.
- J. B. Valk, Flushing, Long-Island.
Grapes, 12 varieties.
- From the garden of the late Jno. B. Smith, Philadelphia.
9 varieties of Pears, by Dr. W. D. Brinckle.
- Wm. Keith, Roxbury, Massachusetts.
Baldwin Apples,
- Samuel Goodrich, Stockbridge, Massachusetts.
15 varieties of Apples.

J. J. Thomas, Chairman of the Business Committee, said that he had a small select list of fruits prepared, and asked whether he should now present it.

Doct. Wendell thought it would be better to postpone the presentation of such a list until the Convention had examined the fruits and discussed their merits, &c.

After some remarks from other members, J. J. Thomas read his list, and, on motion of Thos. Hancock, it was referred to the Special Fruit Committee.

Hon. A. Foote, of Massachusetts, remarked; that the list should be extended; that a great many of the best fruits were left out. Several gentlemen suggested that lists of varieties adapted to certain localities should be prepared by the Committee.

James Arnold, of New-Bedford, recommended leaving the whole matter in the hands of the Special Fruit Committee. Dr. Hare spoke of the importance of *facts* in regard to varieties that might be recommended, and hoped the Committee would accompany their lists with such facts as they might base their recommendations upon.

Dr. Munson hoped the committee would take into consideration the variations of soil, climate &c., by comparing specimens of fruit grown on various soils, and in various sections of the country. Dr. Hare again said the Committee should not present a report until they could accompany it with full and satisfactory evidence of the merits of varieties under all circumstances.

W. R. Prince here moved that the Special Fruit Committee be instructed to prepare a list of rejected or worthless varieties.

The motion was opposed by Mr. Marks, of Greene County, who understood the whole matter to have been referred to the Special Fruit Committee.

Mr. Olmsted, of Connecticut, thought it premature to present such a list, as sufficient information has not yet been collected to enable any committee to do it correctly. Mr. Smith, of Hartford, remarked, that the committee might with safety place a variety on the rejected list when *all were agreed* as to its worthlessness. Mr. Hogg remarked, that to prepare a correct list of rejected varieties would be labor enough for three months, and the committee should not be embarrassed with it at this time. The motion was rejected.

Dr. Underhill, on behalf of the American Institute, tendered an invitation to the members of the Convention to attend the Fair at Castle Garden, and the address of Dr. Tyng, at the Tabernacle.

He also stated that the officers of the Institute would be happy to receive the fruits for exhibition at Castle Garden, after the Convention adjourned.

Thos. Hancock moved that the fruits remaining at the adjournment of the Convention be presented to the American Institute for exhibition. The motion was seconded by Samuel Walker, and carried.

Henry Meigs read a communication relative to Docknall's (France) new system of Pomology, or Classification of Fruits.

Mr. Meigs also spoke of the benefits the country might derive from the distribution of grafts or scions of the best fruits; that he had himself, within three or four years, distributed 30,000 for the Farmers' Club.

The Hon. Hugh Maxwell remarked, that he came here to learn—to obtain information from practical men who had assembled from various parts of the country. He wished for a general discussion, to avail himself of the experience of this body.

THE CULTURE AND MANAGEMENT OF FRUITS.

James H. Watts, of Rochester, N. Y., presented the following communication relative to the *Northern Spy* apple:

Rochester, Monroe Co., N. Y.

To the President of the Pomological Convention at New-York:

In presenting the "Northern Spy" apple amongst so great a variety of apples as are here before us, I feel that facts regarding its origin, the growth of the tree and its fruitfulness, will not be amiss.

Like every new thing now-a-days, to establish its character has been no small task. It is enough to say, that I find it has friends now wherever known.

It has been repeatedly published, that from seeds brought from Connecticut forty years ago, (which were planted by the late Oliver Chapin, in East Bloomfield, New-York,) the first tree was produced, and from the tree suckers were taken and planted, the original having died. The trees from which the apples were taken, now presented, are growing in Mendon, N. Y., and I can truly say, I have never seen a more beautiful sight than the fruit with which they were loaded.

I went fifteen miles to see them, that I could tell the Convention that an estimate was made that from the twenty-three trees one hundred and fifty barrels of the apples would be secured, one hundred of which were selected fruit; and the crop sold for three hundred dollars, and this in a region of country where other choice apples sell at one dollar per barrel.

The tree grows upright, and needs thorough pruning to give the fruit color as well as flavor.

The apples keep in cool locations until March, and even June, as fresh as a June picked apple, and are fragrant to the last, as well as juicy. I have done much to disseminate the scions as well as trees, and know no apple in Western New-York which will compare with it as a long keeper except the Russet. I only hope to live to see the day when they shall be as plenty as other apples, so that every one can have them.

Very truly,

JAMES H. WATTS.

W. R. Prince moved the appointment of a committee of five to investigate the various maladies, and the depredations of the various insects injurious to trees and plants.

Thos. Allen, of Missouri, said he felt great interest in this subject; that in the Mississippi valley they could not ripen plums on account of the ravages of the Cureulio. The pear tree, he said, was also attacked by an insect that commences its operations on the ends of the young shoots, by eating out the pith, and so poisonous is the bite, that although the affected part be cut away, yet the tree turns brown and dies.

He said, there were in that section of the country no pear trees of fine quality or recent growth, owing to this insect; that a few introduced by the old French settlers had withstood all attacks of climate and disease. He wished this matter to come before the Committee on Maladies, &c., and would offer as a substitute for W. R. Prince's resolution, "that a committee of five be appointed to investigate into and report upon the maladies of fruit trees, and the ravages of insects upon the same, and the fruit thereof, and the best preventives or remedies therefor." W. R. Prince accepted of the substitute, and it was adopted. The chair appointed the following gentlemen committee:

Prof. HARRIS, of Massachusetts.

W. R. PRINCE, Long Island.

Dr. RUMSEY, Fishkill Landing.

Prof. HALL, of Albany.

Dr. W. D. BRINCKLE, Philadelphia.

H. W. S. Cleveland, of New-Jersey, made a few interesting and appropriate remarks in regard to Horticultural Exhibitions. He said,

that all articles for which premiums were offered should be accompanied by statements of facts relative to their culture.

D. F. Manice, of Hempstead, L. I., presented the following notes relative to the quality of certain varieties of fruits he had tested :

Salt to Quinces has succeeded.

Salt to Plums a failure.

Manure litter, also.

Success of Plums, good.

Pears, trained dwarf, not so subject to blight.

Season with us has been very unfavorable.

Pears which do not do well with me :

Queen Low Countries—fair and handsome; fall before ripe, and without flavor.

Napoleon—poor, astringent.

Dearborn's Seedling—poor, two seasons out of three.

Capiamont—inferior, better on pear than on quince stocks.

Flemish Beauty—liable to fall before ripe; succeeds well on quince.

Duchesse d'Angoulême—not well flavored; great bearer, and fruit fair.

Crassanne—inferior.

Easter Beurré—is as yet doubtful.

Beurré d'Amalis—poor.

Beurré Bonne—poor.

Cumberland—handsome, poor.

Doyenné Blanc—poor, cracks; does better on quinces.

D'Angora—probably of not much value from any specimens.

Fortunée—was poor the only season it produced with me.

Glout Morceau—has never yet equalled my expectations.

King Edward—has always fallen before ripe.

Callebase—great bearer, but inferior.

Beurré Knox—great bearer, but inferior.

Russet Pears—generally are more perfect with me than others.

Beurré Bosc—fine.

do Golden—good.

do Diel—variable as to size and quality; sometimes very fine.

do Niel—first fruited 1848; very good.

Doyenné Louis—first fruited 1848; do.

Colmar Epine—first fruited 1848; do.

- Bonchrétien Fondante—very good.
 Fondante d'Automne—very good.
 Hampden Bergamot—generally very good.
 Dix—fine, grows well on quince.
 Doyenné Gris—fine.
 Dumortier—very good.
 Frankréal d'Eté—generally very good.
 Gendesheim—very good.
 Heathcot—good.
 Héricart—variable; this year good.
 Julienne—variable; sometimes good.
 Jalousie de F. Vendée—very fine.
 Louise Bonne de Jersey—better on pear than on quince stock; is not uniformly good.
 Long Green—good, though this year inferior.
 Madeleine—good.
 Muscat of Aug.—good.
 Roi de Wurtemberg—is sometimes fine.
 Rostiezer—first rate.
 Rousselet Hatif—very good for the season.
 Sugar of Hoyerswerda—fruited but once, then fine.
 St. Ghislain—fine.
 Seckel—fine, young trees bear indifferently.
 Stevens' Genesee—only middling.
 Thompson—good.
 Urbaniste—good.
 Williams' Bonchrétien—fine, when all its qualities are considered in flavor it is not better than second rate.
 Bloodgood—good, but not high flavored.
 Hessel—great bearer, third rate.
 Marie Louise—has lacked flavor, and is generally astringent.

He also suggested the inquiry, why does Doyenné Blanc crack on sea coasts?

D. F. Manice also stated, that he had succeeded in ripening fine crops of plums on a sandy soil, by dwarfing the trees, and growing them six feet apart, surrounding the orchard with a tight board fence eight feet high, and paving the surface of the ground entirely with brick. He had tried salt and litter without any good effect. He said

that trained trees, within five feet of his garden, but not fenced or paved, produced no fruit. He remarked that the Maclura was winter killed on Long Island.

J. W. Knevels, of Fishkill, said it was not winter killed with him.

Dr. Munson, of New-Haven, said it would not prove suitable for hedges in New-England.

Dr. Underhill spoke of the effects of climate and locality on fruits. He had said it was believed by some that the Newtown Pippin was degenerating, because it did not succeed well in certain localities, but he said he had never seen it finer than the past year. He said, if we attempt to cultivate apples in the south, we must rise up on the mountains until we arrive at an altitude where we obtain a temperature corresponding to that of the locality where the fruit originated.

In Jamaica or Cuba, he said, the Newtown Pippin may be successfully grown by pursuing such a course.

The following communication, accompanied by three boxes of fruit, was received from F. R. Elliott, Secretary of the Pomological Convention recently held at Columbus, Ohio :

Cleveland, 6th Oct., 1848.

To the President and Members of the National Pomological Convention :

Gentlemen—I have the honor to transmit to your honorable body, the following slight sketch of the doings of the Ohio State Fruit Convention, assembled at Columbus, September 27th and 28th, 1848.

This being the second State Fruit Convention of Ohio, the increased numbers of gentlemen in attendance, as well as the large quantity of specimen fruits compared with last year; gave evidence of the interest which this course has excited among fruit growers of the State.

At the hour appointed for assembling of the Convention, the same was called to order by appointing Rev. C. Springer temporary chairman, and F. R. Elliott temporary secretary.

The election of permanent officers by ballot, resulted in the choice of A. H. Ernst, esq., president ; C. Springer, 1st vice president ; S. A. Barker, 2d vice president ; F. R. Elliott, M. B. Bateham, secretaries.

The value of various fruits in Ohio, with a knowledge of the different names by which they are grown, being the principal object of the Convention, the same was duly discussed by the members in attendance during two days' session.

A State Fruit Committee having before been appointed, some changes were made of its members, and Professor J. P. Kirtland elected President.

With a view to advance the objects of this Convention, as well as of others of like nature, the following resolutions were passed :

Resolved, That this Convention, seeing the necessity of unity in action among pomologists, recommend to the National Convention to be convened at New-York, October 13th, 1848, the appointment of a future National Convention, at a time suited to the attendance of delegates from State Conventions.

Resolved, That we recommend to pomologists throughout the states, the calling of State Conventions for the coming year, at such time as will enable delegates to attend the National Convention without loss of time or delay.

In accordance with the above, the Ohio State Convention, after deciding that its next Convention be held at Cincinnati, has left the time of assembling for its president to name.

In accordance, also, with the wishes of the members of the Convention, a box of specimen fruits has this day been forwarded to No. 61 Broadway, New-York, for examination by members of the National Convention.

F. R. ELLIOT,

Secretary Ohio State Fruit Convention.

The Fruit Committee not being ready to report, the following discussion took place :

The *Dix Pear* was taken up—five specimens presented by J. M. Earle, of Worcester.

Samuel Walker of Roxbury, said it was one of the best of pears, but a tardy bearer, twelve or fifteen years elapsing after trees were planted before they bore. He said it did not grow well on quince,

but succeeded when double grafted. Mr. Cabot, of Salem, Mass., had grafted it on a large healthy stock, yet it did not bear for fourteen years.

Mr. Earle said, that in his neighborhood it did well on pear ; he had not seen it on quince stock. He had not found it such a tardy bearer ; had grafted it on a tree of Rushmore's Bonchrétien, and it bore fruit in three years. He had known other instances of a like nature ; indeed, he said, it was its early bearing and productiveness that first induced him to propagate it. He knew trees that produced three or four barrels every year, the fruit always fine, fair, and never cracked.

B. V. French, of Braintree, Mass., said that eighteen years ago he had a St. Germain tree of which the fruit did not please him, and he grafted the leading centre limbs with *Dix*, and the side limbs with Wilkinson. He had seen no fruit on the *Dix* yet, whilst he had bushels of Wilkinson.

C. M. Hovey said, that near his residence in Cambridge, there was a tree that bore two barrels of fruit in a year, and supposed it was grafted in 1832 or 3, and commenced bearing in 1843 or 4. He said that some time ago the place on which it stands had changed owners, and the new occupant, not knowing its fine qualities, used it as a cooking pear ; recently, however, he sold them for \$14 pr. barrel, and he knew them to be resold again in Boston market for \$28 pr. barrel. He said, that like most of the American pears, it did not succeed well on the quince.

Samuel Walker said it had borne with him in two years on quince double worked, and he considered it one of the finest pears in the country.

The President said he had trees that were purchased of W. R. Prince some sixteen years ago, and they had only commenced bearing a few on the top branches two years since, but that he had grafts set in old trees that bore in six years ; with him it always cracked badly. At Beverly, he said, they were always fair, while at Lynn, a few miles distant, they uniformly cracked.

C. M. Hovey referred again to the tree near his residence ; he said there it was always fair, while *Beurré Diél* and *White Doyenné* near it occasionally cracked. It stands on a ridge of loamy soil, on a sub-soil of clay.

Dr. Underhill remarked that the soil was an important consideration in connection with fruitfulness; trees that grew rapidly, made wood instead of fruit buds, and consequently did not bear well. Trees rapidly grown, he said, were also tender, having large sap vessels; he believed the yellows in peach trees to be caused by the prevalent custom of forcing their growth. He said he had planted peach stones in a soil so barren that they were not fit for budding in four or five years; this he did to avoid the diseases consequent on rapid growth.

J. M. Earle said, the soil on which the Dix trees grew at Worcester, to which he had before alluded, was a loam, where the roots struck down three feet before they came to the hard pan, and they were always in a vigorous condition.

A. McIntosh said the Dix Pear was fine with him on the pear stock at Cleveland, Ohio, but would not grow on the quince. His tree was probably fourteen years old.

H. W. Terry, of Hartford, said that a neighbor of his had a large tree of the *Andréus* pear on quince, 7 years old, that bore this year $1\frac{1}{2}$ bushels of fruit.

The *Buerré d'Areberg* pear was next discussed. Samuel Walker called it "The Prince of Pears;" he said that in most importations from Europe, the *Glout Morceau* had been received for this variety; and that amongst cultivators the two pears had been much confounded, but that now the confusion was in a great measure corrected. He said the first true *Buerré d'Areberg* he saw, were from trees of Col. Wilder, that he received of Madame Parmentier, of New-York. He had grafted it on a large tree, and it bore plentifully in three years. It not only bore large crops, but adhered to the tree in the most violent gales, and ripened without any artificial means. Worked directly on the quince, it does not unite well at all; he has it double-worked, but it does not succeed so well as on the pear stock.

The President said, that with him for twelve years, it had produced large crops of fine fruit. He barrelled them up in the ordinary way, and they ripened without further care.

C. M. Hovey said his experience corresponded with that of Mr. Walker and the President. Mr. Thompson, of the Loudon Horticultural Society, he said, considered it inferior to the *Glout Morceau*.

He said in France he had not seen a true *Beurré d'Areberg*; the *Glout Morceau* being invariably cultivated for it, as far as his observation had extended, and he had made particular inquiries of most of the principal nurserymen.

As a general thing, Mr. Hovey said, that double-worked pears do not succeed well for any length of time.

W. R. Prince said the *Beurré d'Areberg* and *Glout Morceau* were the two best winter pears. He said the reason why Mr. Hovey did not find the *Beurré d'Areberg* in France was, that he did not inquire for it by the proper name. That it was cultivated by the French as *Soldat Laboureur*. Mr. Hovey replied, that *Soldat Laboureur* was a new pear. Mr. Walker agreed with him. Thomas Hogg said that *Soldat Laboureur* was found in old catalogues.

W. R. Prince said that the *Glout Morceau* was the true *Beurré d'Areberg*, and that the *Beurré d'Areberg* or *Soldat Laboureur* was the Orpheline d'Enghien. The President said there were in cultivation, or in catalogues, three *Soldat Laboueurs*; that the *Beurré d'Areberg* was known sixteen years ago, when he purchased his tree of Mrs. Parmentier, under its appropriate name.

J. M. Earle remarked, that he had once stated that the *Glout Morceau* was liable to crack, but that since that time it had proved fine, better with him than the *Beurré d'Areberg*.

The *Glout Morceau* was next taken up—specimens presented by J. M. Earle, of Worcester, C. M. Hovey, of Boston, and Mr. Eagle, of Oswego. J. M. Earle said he preferred the *Glout Morceau* to *Beurré d'Areberg*, as being less acid.

C. M. Hovey said it was one of the best growers on quince, stout, vigorous, and ornamental in form, so much so that Loudon figures it in his Arboretum, and recommends it as an ornamental tree. Mr. Hovey also spoke of its distinguishing features, and of its history and origin.

Samuel Walker said the *Glout Morceau* tree was one of the most thrifty growers on the quince, and remarked, that all trees on quince stocks should be planted so deep that the quince would all be under the ground to avoid the borer.

He has seen no blight or black spots on trees of this variety, nor had he lost any of them, while he had lost St. Germain, Chaumontel and other sorts. Those who liked a *sweet* pear would choose this, and those who preferred a more *sprightly*, the Beurré d'Arenberg.

He knew but one drawback to this variety, and that is, the tenderness of the young fruit, which are frequently killed by slight frosts. On the quince, it rarely bears before the fifth, sixth or seventh year, on account of its vigorous growth.

The President said, it was remarkably well adapted to the quince stock. He has a tree fifteen years old, that bears a barrel of fruit. On the pear stock it does not bear so well with him.

J. W. Hayes, of New Jersey, and J. W. P. Allen, of Oswego, concurred in what had been said relative to this pear. The President said that it had not done so well at Beverly; as with him the fruit frequently fell when about as large as an ounce ball. J. M. Earle remarked that every blossom set its fruit, but afterward dropped many; but still the crop was large enough. A. Saul said it was more subject to blight than any other. P. Barry replied, that after much observation on the attacks of blight, he had come to the conclusion that no one variety was more liable to it than another. That cases frequently occur, calculated to induce such a belief, but it was fallacious; he had seen trees, said by some to be proof against the blight, cut down by it, while others, said to be quite susceptible to it, escaped, growing side by side.

The convention then adjourned till 4 o'clock in the afternoon.

AFTERNOON SESSION.

The convention assembled at 4 o'clock, pursuant to adjournment.

A. J. Downing, from the Special Fruit Committee, reported as follows:

[Assembly No. 244.]

P.

REPORT OF THE SPECIAL FRUIT COMMITTEE.

The Special Fruit Committee, to whom has been assigned the duty of presenting select lists of fruits, respectfully report :

That, after consideration, they find it impossible, in the present state of pomological information, to offer to the convention now assembled any extended list, comprising any considerable number of fruits worthy of general cultivation.

This embarrassment arises from two causes: First: In the fact that many excellent varieties, well known and highly approved in those sections of the Union where certain members of the committee reside, are either partially or wholly unknown in sections where other members reside, and consequently no unanimous action could be had on those varieties. Second: In the fact, that a large number of varieties are only well proved in certain localities, and therefore, from this very fact, cannot be recommended for general cultivation. They, therefore, conceive that the preparation of extended lists of varieties worthy to be recommended to the public generally, by this convention, is a labor which requires more time, research and experience, and can only be satisfactorily performed by a general committee, with sub-committees in various portions of the Union, which shall be in constant activity for the purpose of acquiring this information, in order to lay it in a satisfactory shape before this convention at a future meeting.

It may seem to many members of this body, an easy task to designate fifty or even one hundred excellent fruits of any class for general cultivation; but actual comparisons of the facts and information on this subject, possessed by the different members of this committee, have convinced them that it is extremely difficult to get an unanimous verdict in favor of ten varieties of any one class of fruits. There is such a diversity of experience, and consequently of opinion, respecting the merits of well known varieties, that many fruits which have long enjoyed the most irreproachable character in one part of the country, are found, on inquiry, to have the most indifferent reputation in another section. Indeed, so difficult is it from these causes to do what at first sight seems so easy, that your committee have been reminded of the remark which an inexperienced politician once made

to an eminent statesman in the political turmoil which was going forward; "why," said he, "why make all this noise and trouble about a President, why not all agree on some good man and elect him at once."

Some other committee, more capable than the present one, might perhaps have been able to agree at once upon lists of 100 varieties of apples and pears; but we have only, after considerable discussion, been able to resolve to submit the following very small lists—leaving it to the future committees, with *months* instead of *hours* at their disposal, to arrive at more extended and complete results:—

APPLES.

Early Harvest,
Large Yellow Bough,
American Summer Pearmain,
Summer Rose,
Early Strawberry,
Gravenstein,
Fall Pippin,

Rhode Island Greening,
Baldwin,
Roxbury Russet,
And, for particular localities,—
Yellow Bellefleur,
Esopus Spitzenburg,
Newtown Pippin.

PEARS.

Madeleine,
Dearborn's Seedling,
Bloodgood,
Tyson,
Golden Beurré of Bilboa,
Bartlett,
Seckel,
Flemish Beauty,

Louise Bonne de Jersey on *quince*,
Beurré Bosc,
Winter Nelis,
Beurré d'Aremberg,
And, for particular localities,—
White Doyenné,
Gray Doyenné.

PEACHES.

Grosse Mignoane,
George IV.,
Early York, *serrated*,
Large Early York,
Morris White,
Oldmixon Freestone,

Coolidge's Favorite,
's Yellow,
Early Tillotson,
Crawford's Late,
And, for particular localities,—
Heath Cling.

PLUMS.

Jefferson,
Green Gage,
Washington,
Purple Favorite,
Bleecker's Gage,

Coe's Golden Drop,
Frost Gage,
And, for particular localities,—
Imperial Gage.

CHERRIES.

May Duke,	Knight's Early Black,
Black Tartarian,	Downer's Late,
Black Eagle,	Elton,
Bigarreau,	Downton.

In their report, the committee did not state their principle of action, which was to reject every variety against which there were three voices, and to adopt none which had not been extensively cultivated.

Mr. Allen, of Missouri, moved the adoption of the report. A discussion then arose relative to the Geo. IV. Peach, (which W. R. Prince said was a synonym of the Red Rare Ripe,) in which W. R. Prince, A. J. Downing, J. W. Knevels and C. M. Hovey participated.

Samuel Walker moved that the report be accepted, by taking up the varieties in detail, commencing with Apples. The motion was carried, and the Early Harvest, Large Yellow Bough, American Summer Pearmain, Gravenstein, Summer Rose, Early Strawberry, Fall Pippin, R. I. Greening, Baldwin and Roxbury Russett, for general cultivation, were adopted without objection.

For *particular localities*, Yellow Bellefleur.

W. R. Prince said he had never known it poor any where. Thos. Hancock said it was very inferior in New-Jersey; the trees were unhealthy; he had cut his down many years ago. J. M. Earle said it was poor in the vicinity of Worcester.

Dr. Munson spoke well of it at New-Haven, Conn. Wm. Reid said it was good in Eastern Jersey. C. M. Hovey said it succeeded well around Hartford; bore large crops. P. Barry said it succeeded well in Western New-York; the trees healthy and good bearers, and the fruit fair and fine, and very highly esteemed. H. W. Terry said it did poorly at Hartford. A. Foote said, if retained, it should be in the general list.

Samuel Walker remarked that it would be impossible to present a list suited to all meridians, but that we should do all we can to recommend as good a list as possible.

C. M. Hovey said that the same qualifications might as properly be appended to other varieties. A. McIntosh said in Ohio it was

one of the best apples; there the Baldwin was poor, and sold not on its real merits, but by its eastern reputation and fair skin.

H. W. Terry said it was not good in Hartford. Dr. Munson said with him a fungus attacked the branches. George Deacon, of Burlington, N. J., said that he had 20 large trees, and in eight years had only one good crop. Mr. Tomlinson remarked that it did well at Schenectady. J. Comstock, of Dutchess Co., said he had grown the Yellow Bellflower for 20 years, in latitude 42, at an elevation of 600 feet, and in consequence of the shortness of the season the fruit did not ripen well two years in three, and was therefore too acid. The trees grow vigorously, and bear well. On motion, it was adopted as reported, for *certain localities*.

Esopus Spitzenburg, for certain localities Adopted.

Dr. Underhill inquired if any one had large trees of this variety, die. He said his had died, and he thought there might be some malady peculiar to it.

Newtown Pippins, for certain localities, was next brought up.

W. R. Prince said this was one of those varieties that required a rich soil and good culture.

Samuel Walker said it had been thoroughly tried around Boston, and proved a complete failure. He believed no man could cultivate it in Massachusetts profitably.

Dr. Underhill said he had 1,700 trees of this variety, and had often produced fruit 11 inches in circumference, and sometimes 12. He said he had made experiments in manuring, but had found nothing equal to stable manure.

Lawrence Young, of Kentucky, said the Yellow Bellflower and Newtown Pippin were the only varieties on the list that assumed the character of winter fruit with him.

C. M. Hovey said his opinion was, that with proper care it could be cultivated successfully in Massachusetts. The orchards of Massachusetts, he said, were not well cultivated; in many parts of the country quite neglected.

Sheldon Moore, of Connecticut, said that he and his neighbors, fifteen miles southwest of Hartford, had attempted to cultivate it, but had failed.

J. W. P. Allen said, at Otsego both Green and Yellow Newtown Pippins did well.

It was then, on motion, adopted as reported.

Pears were next taken up.

For general cultivation. Madeleine. Adopted.

Warborn's Seedling. Only one objection. D. F. Manice, of Long Island, said it failed with him two years in three. Adopted.

Bloodgood. Samuel Walker said he had formerly an unfavorable opinion of this pear, now he regarded it as one of the best early varieties. J. M. Earle said it was apt to be winter killed at Worcester. Favorable reports were given of it from all other places, and it was adopted.

Tyson. J. M. Earle asked leave to offer the *Rostiezer* as a substitute. C. M. Hovey said the *Tyson* was considered fine at Boston. W. R. Prince spoke well of it. Dr. Brinckle said it was very fine. The original tree, at Jenkinstown, he said, was six feet in circumference; and there were ten or twenty others, of good size, around Philadelphia.

J. J. Thomas said it had borne with him, and proved fair and of first rate excellence. Thomas Hancock and Dr. Munson made similar remarks in its favor. It was adopted.

Bartlett. Samuel Walker remarked that the original name was "Williams' Bonchrétien," and he would therefore move that it be adopted as Williams' Bonchrétien, or Bartlett. Seconded by C. M. Hovey, and adopted.

Seckel. Adopted unanimously.

Loiuse Bonne de Jersey, (on quince.) C. M. Hovey suggested that the qualification "on quince" be left out, as it might induce the belief that it was not good on pear stock. A. McIntosh, of Ohio, P. Barry, of Rochester, J. Lovett, and R. Manning, of Massachusetts,

stated that they had found it better on the quince. C. W. Hartwell said he had examined it in five different states, and found it invariably fine on the quince.

J. M. Earle, of Worcester, said it had not done well with him on the quince. The President said he had found no difference. Thomas Allen, of Missouri, suggested that if "on quince" be struck off, the variety should be excluded entirely from the list. Samuel Walker moved that it be referred back to the fruit committee, which motion was carried.

Flemish Beauty was next taken up. W. R. Prince suggested adding "or Beurré Spence," as the trees received under that name from abroad had invariably proved to be *Flemish Beauty*. S. Walker objected to it, as the fact of their being synonymous was not yet sufficiently clear. Dr. Wendell said he had a tree imported for the *true Beurré Spence*, that bore this year, and he at first supposed it was correct, and had presented specimens as such at the Buffalo Convention; but it was not then fully grown, and had deceived himself and other pomologists; since then it has proved to be *Flemish Beauty*. He said, although satisfied that the two were one sort, yet he preferred leaving the question as it was, for the present, as there was a possibility of the *Beurré Spence* being yet found.

J. M. Earle and C. M. Hovey said that trees imported as *Beurré Spence* from various parts of Europe, and at various times, had proved to be *Flemish Beauty*. The President said he had been trying to get the *Beurré Spence* for 10 years, and had frequently received the *Flemish Beauty*. S. Walker and A. Saul said that several varieties had been received for *Beurré Spence*.

Flemish Beauty adopted as reported.

Beurré Bosc, *Beurré d'Areberg*, *Winter Nelis* and *Golden Beurré of Bilbao*, adopted unanimously.

For certain localities, *White Doyenné* and *Gray Doyenné*.

On motion, the Convention adjourned till the next morning, at 9 o'clock.

The Convention met on Friday morning, agreeable to adjournment.

Dr. H. Wendell, of Albany, remarked, that it was well known to most of the gentlemen present, that a North American Pomological Convention had been recently held at Buffalo, at which twelve states, as well as both the Canadas, were represented by large delegations of enlightened pomologists; and previous to the adjournment of that Convention, feeling the necessity of continued and united action, a resolution was passed unanimously, "that a North American Pomological Convention for the year 1849 should be held on the day succeeding the close of the Annual Fair of the New-York State Agricultural Society, at whatever place the Fair should be held;" and such place was designated, because it was generally understood that the Fair would be held somewhere in the vicinity of this city, and at a season of the year when most of the larger fruits are fit for examination. Cincinnati, Philadelphia and Baltimore were suggested, but the Convention unanimously agreed on the above place, and also authorized the Secretary of the New-York State Agricultural Society to invite horticultural and agricultural societies on this continent to send delegates to it. He would, therefore, offer the following resolution:

Resolved, That the President of the Convention designate a committee of one from each state and territory represented here, whose duty it shall be to report, previous to the adjournment this morning, what action, if any, it is proper to take in regard to holding future pomological conventions.

A. J. Downing moved, as an amendment, that the same committee nominate a standing Fruit Committee, to be composed of not more than five of the most skilful pomologists or fruit growers in each state, whose duty it shall be to collect all the information in their power on the fruits within their respective districts, and report the same at the next session of the Convention.

The resolution and amendment were adopted, and the Chair appointed the following gentlemen:

Herman Wendell, New-York.	Yardley Taylor, Virginia.
S. Walker, Massachusetts.	L. C. Eaton, Rhode Island.
George Gabriel, Connecticut.	Thomas Allen, Missouri.
Russell Mattison, Vermont.	H. W. S. Cleveland, New-Jersey.
A. McIntosh, Ohio.	L. Young, Kentucky.
Dr. W. D. Brinckle, Penn.	A. J. Downing, New-York.

The list of Plums was then taken up.

Washington. Adopted.

Green Gage. W. R. Prince said this was one of the best of plums, but the tree was so decrepid and unhealthy that it should by no means be recommended on this list. He proposed substituting *Prince's Yellow Gage*, or affixing to the Green Gage the words "an excellent fruit, but an unthrifty grower." A. Foote, of Massachusetts, and C. Hamilton, of Orange Co., N. Y., said it grew very well with them; the latter gentleman said it grew as well with him as Prince's Yellow Gage. J. M. Earle said, in Worcester it is a fair grower, and as healthy as any other, and in quality *unapproached* by any, except the *Purple Gage*. Mr. Hovey said, at Boston it is considered the very best of plums, and though not a rapid grower, was healthy and vigorous.

S. B. Parsons, of Long Island, said he thought it very proper to add the qualification suggested by W. R. Prince, as it was a remarkable poor grower on their grounds, so much so, indeed, that they were almost compelled to abandon its cultivation.

S. Walker said he was surprised to hear the remarks of the gentlemen from Long Island. He said the Green Gage grew well around Boston when innoculated on suitable stocks. S. B. Parsons replied that they had worked it on several varieties of stock, and grown it on various soils, and in all cases it was a poor grower.

D. F. Manice, of Long-Island, said with him it grew well.

C. Downing said that no such qualification as that proposed, should be affixed on account of poor growth in a single locality. Thos. Hancock said he had found it healthy; was opposed to any qualification.

W. R. Prince's amendment was rejected, and the Green Gage passed as reported.

Bleeker's Gage, *Purple Favorite* and *Coe's Golden Drop*, were adopted without discussion.

Frost Gage. W. R. Prince said this plum was peculiarly subject to the black knots or excrescences. C. Hamilton, of Orange Co., said, with him it was free from this disease, and it was one of the most profitable and highly esteemed varieties. The trees are thrifty and

smooth, and he sells five hundred trees of it for one of any other variety. He has never been able to supply the demand, and had added last year five thousand trees to his stock. J. W. Knevels, of Fishkill Landing, said this variety originated near his residence, and was a valuable plum, but he agreed with Mr. Prince, that it was peculiarly subject to the "knots," and thought it might be owing to its being usually propagated from suckers. C. M. Hovey said it should not go out on the list, as its reputation was yet quite local.

W. R. Prince moved that the words "subject to the knots," be affixed, but the motion was lost, and the Frost Gage; adopted.

For certain localities, *Imperial Gage*. Adopted.

J. M. Earle said he would suggest amending the report, by adding the Purple Gage, a most excellent fruit, nearly equal to the Green Gage, and lasts much longer.

J. Lovett said that the Committee had discussed it, but not reported it, in consequence of some confusion respecting its name.

J. M. Earle remarked, the Purple Favorite already adopted was probably a seedling from the Purple Gage, later, but inferior in quality, and does not last as long.

S. B. Parsons inquired if the *Red Perdrigon* had been considered by the Committee, as it was, in his opinion, a most productive and excellent variety. Mr. Lovett replied, that it had been discussed, but it could not be agreed upon.

W. R. Prince moved that the *Purple Gage* be added to the list, and the motion was carried.

A. Foote expressed confidence in the judgment of the Fruit Committee, and admired the caution they had exercised in presenting the list of fruits, but thought a very important omission had been made in leaving out Fall and Winter Sweet Apples.

Cherries were then taken up. Black Egle, May Duke, Black Tartarian, Knight's Early Black, Downer's Late Red Elton and Downton, were adopted without discussion. *Bigarreau*. W. R. Prince said that "*Bigarreau*" was a misnomer commenced by the London Horticultural Society, and followed by Mr. Downing in this

country. He said the word "Bigarreau" was used to designate a class of cherries, not any particular variety. He would therefore move, that it be struck out, and the original name of "*Graffion*, or *Cerise Ambreé*," inserted. C. M. Hovey suggested, as an amendment, that it be called "*Graffion*, or *Bigarreau*." The amendment was carried, and the Bigarreau so adopted.

Peaches were next taken up. *Grosse Mignonne*. W. R. Prince said the true variety was very little known, the sort usually cultivated being spurious. J. W. Knevels agreed with Mr. Prince. He had not been able to find the true variety. Mr. Downing called it the "World-renowned Peach." He thought he ought to have called it the "*great-unknown*," and he would be glad to have the true variety made known to him. R. Manning's opinion was called for. He said the true *Grosse Mignonne* was cultivated in Massachusetts, and in some collections under the name of *Royal George*.

C. M. Hovey moved that the word "true" be affixed to the *Grosse Mignonne*. The motion was seconded by W. R. Prince; but it was opposed by some member on the ground that it was superfluous, as it was to be presumed that the committee meant, in all cases, the true variety. The motion to affix "true" was lost, and the *Grosse Mignonne* adopted.

Early York, (serrated). W. R. Prince said this was not the original *Early York*, but probably the *Early Violet*; the true one being the *Large Early York* of New-Jersey, much superior to the other. He would therefore move that the *Early York* (serrated) be stricken out, and the *Sweet Water* substituted. J. Lovett said the committee were unanimous in recommending it. R. Manning said with him the *Early York* (serrate) was always fair and fine, while the *Sweet Water* was poor, and a slow grower. J. J. Thomas, of Macedon, remarked that in Western New-York it was extensively cultivated under the name of *Early Purple*, and was very highly esteemed. He knew of no one of its season equal to it, except the *Early Tillotson*; the *Sweet Water*, he said, was with him frequently winter killed. C. M. Hovey, of Boston, said that with him the *Early York* (serrated) was always fair, and much better than the *Sweet Water*. W. R. Prince withdrew his motion to substitute, and moved that it be called the *Early Violet*. The motion was lost, and *Early York* (serrate) was adopted. *Old Mixon Freestone* was adopted without discussion.

George the Fourth. W. R. Prince said the Early York and Red Rarripe were generally grown for this variety; and as its existence was doubtful, and as it would be recommending the same peach under several names, he moved that it be struck out of the list. J. Lovett said the committee considered these as distinct varieties. Thomas Hogg, senior, said that upwards of twenty years ago this peach was presented by Mr. Floy to the Horticultural Society of New-York, and was considered distinct from any other. J. W. Knevels suggested referring it back to the committee. The motion to strike it out was put and lost, by a vote of 23 to 17.

Coolidge's Favorite. J. M. Earle and R. Manning said it was liable to rot on the tree. Samuel J. Gustin thought it inferior to Walter's Early. J. M. Earle agreed with him. H. H. Crapo was opposed to its adoption. C. M. Hovey said it was one of the best at Boston, and hoped it would not be stricken out. P. Barry remarked that at Rochester it succeeded well, bore good crops, was large, fair and fine flavored, and since it had been brought to notice there, was much admired. Adopted. *Crawford's Late* adopted.

Early Tillotson. Mr. Prince said it was so subject to mildew as to be unworthy of cultivation. Mr. Hovey said that he had lately observed the trees in Western New-York, and they were as white with mildew as though a meal bag had been shook over them. He thought that however fine the fruit might be, such an unsightly tree should not be recommended for culture. P. Barry was asked his opinion respecting it. He said that it was generally subject to mildew, and in moist seasons or soils, particularly so, but that it grew well nevertheless. That it ripened about the same time as the serrate Early York, and very superior in flavor. It was rejected.

Bergen's Yellow. W. R. Prince, R. Manning and others, spoke highly of this variety. D. F. Manice said it was unproductive with him. Adopted.

Large Early York, or Honest John. W. R. Prince and C. M. Hovey remarked that this was synonymous with George the Fourth,

R. Manning said that his Large Early York might not be correct, but it was different from George the Fourth. On motion of C. M. Hovey, the words "or Honest John" were struck out.

C. Sears remarked, that as there appeared to be much confusion in regard to the name of this variety, and as it was desirable to have the matter correct and well understood before sending out the names on the list, he would move that it be referred back to the committee.

An amendment was offered that it be laid on the table. Carried.

W. R. Prince moved a reconsideration of the vote on George the Fourth. The motion was seconded and carried. On motion of H. H. Crapo, George the Fourth was laid on the table for the present.

Morris White. W. R. Prince said this was the White Rarripe, and moved that it be passed as such. Hon. James Arnold objected to the changing of names. George Olmstead thought there was too much time consumed in the discussion of names. D. F. Manice said with him the Morris White was not worth cultivating. Thomas Hancock said there were several White Rarripes. That he had cultivated a seedling from Morris' White for fifteen years, which he considered equal to the old one. After further discussion by W. R. Prince and others, the Morris White was laid on the table.

Heath Cling, for particular localities. Adopted.

Mr. Prince proposed that the Nivette be added to the list of peaches. C. M. Hovey, H. H. Crapo and others, objected.

Dr. Munson, of New-Haven, read the following paper :

Mr. President, and Gentlemen of this Convention :

I would occupy a small portion of your time with a few remarks on the subject of the deterioration of certain fruits of the orchard, particularly such as I think may be attributed to the influence of vegetable parasites. It is well known to you that some varieties of fruit which formerly were of excellent quality, have, in many sections of our country, from some cause or other, greatly degenerated. Where this has been the case, it has often been attributed to the old age of the variety. Unfortunately for this assumption, this degeneracy has not been universally prevalent; but, on the contrary, in some sections the same varieties of fruit are as fair and excellent in quality as in former years, attaining their pristine beauty and perfection.

This seems a fair subject for our investigation, and I would especially invite your co-operation, that with the aid of the practical knowledge here assembled, we may be enabled to decide what is and what is not the true cause of this and some other maladies of fruit trees. It is generally conceded that climate, soil and culture each exert an influence on the vigor and growth of the tree, and quality of the fruit. That some latitudes are more favorable than others; some soils are likewise more favorable to certain fruits than others in the same latitude.

The latitude tolerably well adapted to the apple and pear is quite extended, and so is the diversity of soil, and yet a particular description of each, which might be most propitious to their perfection, would be far more limited.

A mixed soil, having neither too much clay nor too much sand, and not too destitute of, nor having too much humidity, is the soil most desirable for the apple and pear.

Parasitic plants are some of the agents injurious to fruit trees and fruits, despoiling them of their beauty and excellence, and rendering the fruit worthless. These parasitic growths, too, have their appropriate latitudes and localities, and thrive best in regions most suited to them, and attach themselves to such trees or fruits as are most favorable to their growth.

The mistletoe, which grows on the oak, elm, gum tree, &c., and the several species of carcuta, which grow on various plants, are examples of larger kinds of vegetable parasites.

The mosses and lichen, which grow on fruit and forest trees, form another class, and some of them are very injurious to the health and vigor of fruit trees.

We would mention the fungi too, which forms another class. Some of this tribe infest the cerealia, which in Indian corn and in wheat are called smut, though each are of different species; and another kind called spurred rye in that grain.

There is another of this tribe injurious to the apple tree, which was alluded to by a distinguished cultivator here present, from Burlington, yesterday, as having destroyed his bell flower apple trees. I have noticed what is probably the same fungus, in one instance in Connecticut, on the early white Juneating apple.

Other common instances of injurious parasitic growths occur in the mildew on the fruit and foliage of the grape, which likewise infests destructively, many other trees and fruits.

Another, which seems to me of comparatively recent occurrence, I have noticed for these ten or fifteen years past, during which time it has made great progress in destructiveness. I have noticed it chiefly on the foliage of several species of the genus *Rubus*. It is a fungus of a bright orange color, and infests the under side of the foliage of the common red raspberry, *Rubus idæus*, in Connecticut; and the exhaustion occasioned by this fungus, causes the plant to put up a multitude of spindling stalks, and renders it wholly unprolific. This affection disseminates itself, and I know of no remedy for it.

The trailing wild blackberry (*Rubus trivialis*) is attended with a similar parasitic infliction on its foliage, and I have seen half an acre of ground wholly occupied by this vine, and so stunted in growth by this iron rust fungus as not to bear any fruit.

But the most interesting to us on this occasion of the different orders of vegetable formations which become attached parasitically to the wood, foliage and the fruit of trees, and growing on them, is a species of an extensive tribe which, in sections where prevalent, attaches to the fruit of the pear and apple, and occasionally to the peach. It appears in the form of dark spots, or of a number of dark brown dots or patches on the surface of the fruit. On some fruit it exists without producing any very apparent effect, but is a blemish, while in others it produces a slight depression, and on others it destroys the fruit, by causing it to crack in every direction.

It is to this cause, I am convinced, may be attributed the cracking of the white Doyenné pear, by which, in some sections, it is rendered quite worthless. The reason it operates more destructively on this than on any other variety, is probably that the skin of this pear is of such a texture at the time when this parasite sheds its seminal principles, as to be most favorable to their reception and germination, and afterwards to its growth, and penetrating beneath the parenchyma, a substance of the fruit, the parts contiguous being thereby deprived of vitality, shrink, and drying, become hard, thus stunting the growth of the fruit, and often occupying the whole surface of it with hard cracked cicatrices, rendering it wholly inedible. This malady affects

some other kinds of pears in a less degree. In an old variety of pear, designated in some parts of Connecticut as the pound pear, in others as the bell pear—not a baking pear, but a rich, sweet, fall eating pear—the same affection lessens its productiveness, causing its fruit to be less than half its former size, and more or less covered with dark spots, and sometimes it cracks. Other varieties grafted into this tree have done well and produced fair fruit.

It has been asserted by some cultivators, that the cracking of the fruit of the white Doyenné pear might easily be remedied by enriching and good cultivation. Having had some experience for a series of years with a number of pear trees of this variety infested with this malady, I would at this time only relate a statement of facts respecting them.

Some twenty years since I purchased of Wm. R. Prince, of Long Island, a number of pear trees. They, after a series of years, came into bearing, and all but one proved to be the White Doyenné. For the first few years they bore edible fruit, but in a few more years they became in so extraordinary a degree infested with cracks and fissures, and so stunted in size as to be good for nothing. Supposing the evil might be owing to some defect in the variety, I obtained of Mr. E. Averill, of Hartford, Conn., some scions of some trees which then bore remarkably fair White Doyenné pears, which scions I engrafted into one of the trees above mentioned; the grafts did well and bore fruit at first pretty fair, but in a few years were affected with cracks like the rest; and it was afterwards cut off and engrafted with some other variety, which has since bore fair fruit. The other Doyenné trees here alluded to I likewise had topped and engrafted with other kinds, as the Golden Beurré, Bartlett, &c., &c., and all of them have borne beautiful large fair fruit, having no cracks, and the grafts having as vigorous growths as any trees on my grounds.

I would observe, that two of these trees stood on the margin of an asparagus bed, kept in good tilth by enriching every year. A small lateral twig was noticed this year, accidentally left on one of these trees, of the original Doyenné, but having cracked Doyenné pears on it, and not any way improved, showing that cultivation will not cure the affection. I would moreover observe, that the cracking of fruit likewise extended to some apples in the vicinity of these trees, and in one instance to some peaches.

I conclude by observing that it is quite evident that this affection of this fruit cannot be caused by any want of vigor, in the stocks of said trees, because they produce vigorous growth, and fair large fine fruit of any other kinds engrafted upon them, except White Doyenné. In respect to the prevalence of the affection, it is probable it will prevail wherever this parasite happens to exist or can be disseminated, as it, like other plants, has its localities. Of the remedy for it, I recommend none but engrafting with some other variety.

The committee appointed to consider on the holding of future conventions, and to nominate a Standing Fruit Committee, reported as follows :

Resolved, That this Convention be designated the American Congress of Fruit Growers, and that the members or substitutes and officers thereof be regarded as holding their respective appointments for two sessions.

Resolved, That all pomological, horticultural and agricultural associations of North America be invited to send delegates to this Congress.

Resolved, That at the close of the present session of this Congress it be adjourned to hold its second session in the city of New-York, on the first Tuesday of October, 1849, and the following gentlemen to act as the Standing Fruit Committee :

MARSHALL P. WILDER, of Massachusetts, *ex officio*.

New-York.

A. J. Downing, Newburgh,
Chairman of the whole.
J. J. Thomas, Macedon.
Dr. H. Wendell, Albany
P. Barry, Rochester.
B. Hodge, Buffalo.

Massachusetts.

S. Walker, Boston.
F. W. Macondry, Dorchester.
P. B. Hovey, Cambridgeport.
J. Lovett, Beverly.
R. Manning, Salem.

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Vermont.

R. Mattison, N. Bennington.
Martin Slocum, Manchester.
C. W. Goodrich, Burlington.
B. F. Fay, Bennington.

Rhode Island.

L. C. Eaton, Providence.
S. H. Smith, Smithfield.
Alfred Smith, Newport.
J. I. Stimpson, Providence.
B. W. Comstock, do

Q

Ohio.

A. McIntosh, Cleveland.
 A. H. Ernst, Cincinnati.
 S. P. Hildreth, Columbus.
 F. J. Scott, Toledo.
 T. H. Humrickhouse, Coshocton.

Pennsylvania.

Dr. W. D. Brinkle, Philadelphia.
 T. Hancock, Burlington, N. J.
 E. W. Keyser, Philadelphia.
 Thos. P. James, do
 Robert Buist, do

New-Jersey.

H. W. S. Cleveland, Burlington.
 R. S. Field, Princeton.
 J. W. Hayes, Newark.
 J. S. Chambers, Trenton.

Connecticut.

Geo. Gabriel, New-Haven.
 Dr. A. S. Munson, do
 H. W. Perry, Hartford.
 Geo. Olmstead, East Hartford.
 V. M. Dow, New-Haven.

Illinois.

Dr. J. A. Kennicott, Chicago.
 Jno. Wright, do
 J. Y. Scammon, do
 W. W. Arnold, Alton.
 Prof. J. W. Turner, Jacksonville.

Maine.

Henry Little, Bangor.
 S. L. Goodale, Saco.

Maryland.

Samuel Feast, Baltimore.
 Wm. Corse, do
 Lloyd N. Rogers, do

Delaware.

J. W. Thompson, Wilmington.
 Edward Tatnall, Jr., do
 James Canby, do

District of Columbia.

Joshua Pierce,
 J. F. Callan,
 Wm. Breckenbridge.

Kentucky.

Lawrence Young, Louisville.
 Ward Brown, Frankfort.
 H. Duncan, Fayette.
 Jas. Allen, Nelson.
 Geo. W. Messenger, Louisville.

Missouri.

Thomas Allen, St. Louis.
 Lewis Bissel, do
 Jas. Sigerson, do
 Nicholas Reihl, do
 Emile Mullenchrodt, do

Indiana.

J. D. G. Nelson, Fort Wayne.
 D. Irvinhart, Logansport.
 Mr. Scott, Madison.

Canada.

Jno. Frothingham, Montreal.
 Dr. C. Beadles, St. Catharine.
 Jas Dougall, Amherstburg.
 Geo. Leslie, Toronto.

The report was unanimously adopted. Some discussion arose in regard to the name, but the title of the report was confirmed by a vote.

A. J. Downing moved that a committee be appointed to draft a constitution for the American Congress of Fruit Growers, and report at the session of the ensuing year. The motion was carried, and the Chair appointed the following gentlemen such committee :

A. J. DOWNING,
S. B. PARSONS,
J. W. KNEVELS.

DISCUSSION OF FRUITS, CONTINUED.

Spice Apple, from E. A. Newton, Pittsfield, Mass., presented by Thomas Allen. Some were of the opinion that it was the same as Pomme Royal. J. M. Earle thought it was not so high flavored.

The President said it was not so firm as the Pomme Royal, but that he considered it a superior fruit.

A. Foote said it was grown in his neighborhood under the names of Spice, Pear, and Pomme Royal. He had known it for twenty years, and it was esteemed by all who knew it, as one of the very best apples of the season. J. M. Earle said the apple alluded to by A. Foote, was the true Pomme Royal or Dyer. On motion it was referred to the Fruit Committee.

George Olmstead presented the *Case Apple*, a seedling, which he said was as good or better than the Baldwin, in eating, from September to May, and a great bearer.

On motion, this and all other new fruits were referred to the Fruit Committee.

S. Walker proposed the *Doyenné Boussock Pear* for discussion. C. M. Hovey was called on, and stated that he could speak of this variety after three years experience. Some four or five years ago his attention was called to it by Mr. Kenrick's work, and he sent for it to France. Three years ago it bore, and he was surprised to find it so large, handsome and excellent, and so little known. He would

recommend it for general cultivation. R. Manning said he had fruited it for six years, and concurred in Mr. Hovey's opinion of its merits. W. R. Prince also spoke highly of it. S. Walker said the first specimens of this fruit he saw were from Dorchester, the second from Plymouth, the third from Providence, and the fourth from Quincy. Too much could not be said in its favor. Large, fair, and fine flavored : may be recommended as a fruit of the highest order.

The President remarked that he concurred in all that was said in favor of this variety ; that it ripened from the first to the twentieth of September, bore well on both pear and Quince stock ; that in appearance of the fruit, it resembles an overgrown Doyenné.

J. M. Earle said it had succeeded well at Dedham. J. W. Hayes inquired if it cast its leaves early? the President replied it did not.

A. Saul proposed the *Beurré d' Anjou* pear for discussion.

S. Walker said this fruit was first placed on the tables of the Massachusetts Horticultural Society by the President, some four or five years ago. He was at once struck with its appearance and prepossessed in its favour. He then called it an *extra No. (1)* and would call it so now. He had fruited it this season, and tested its quality three or four years in succession. It grows well on the quince, does not shed its leaves early, and is, on the whole, one of the best pears introduced by Mr. Wilder. C. M. Hovey said he had tasted specimens from the President's trees, for four successive years. It bore in his own grounds this season, and he was never more delighted with fruits or flowers than with the specimens on his trees. It ripens from the middle of October, till the middle of November. The President remarked that it grows equally well on pear and quince, is uniformly handsome and fair, does not crack, holds its leaves well, bears early, only one on a spur, and has a fine erect habit. He said, it is also known in France as *Ne plus Muris*.

Lawrence Pear was next taken up.

S. B. Parsons said, on Long Island it was considered first rate, grows vigorously, and bears early and well, of medium size, in eating to January, and keeps well ; may be packed away in barrels like

Beurré d' Aremberg. He would recommend it for general cultivation, and was planting it largely himself.

W. R. Prince said, it was a most vigorous grower, was a seedling originated on a farm on Long Island, was one of the most valuable to cultivate for the market, on account of its great vigour and productiveness. J. M. Earle considered it among the best of pears. C. M. Hovey remarked that it succeeded well on quince stock. Wm Reid spoke of its peculiar growth, the side shoots being at right angles to the stem. He said he had tested it and found it of fine quality. C. M. Hovey added that it was exceedingly hardy, and a vigorous grower.

Here the Convention adjourned till half past 3 o'clock.

AFTERNOON SESSION.

W. R. Prince spoke of the Newtown Pippin. He said that some people believed that there was but one variety. He said he knew two that were quite distinct. The green, he said, had a rough bark that rendered it distinguishable without the aid of the eye-sight. He said there is also a seedling Green Newtown Pippin, with *smooth* bark, and other seedlings of this variety, and he would therefore move that a Committee be appointed to examine into the several varieties of Newtown Pippins. A. J. Downing asked if any one else had doubts on the subject. Wm. Reid remarked that there was scarcely any perceptible difference in the trees of the two varieties in the nursery.

A. J. Downing replied, that they grew very much alike in the nursery rows, but as the trees attained their full growth the difference became quite obvious, and as the fruit ripened, the appearance was so different, that he was surprised that any one should confound them. Hon. Jas. Arnold objected to the appointment of such a committee as Mr. Prince proposed, as the Fruit Committee were fully competent to decide all such questions.

On motion of S. Walker, the *Swan's Orange* or *Onondaga Pear*, was next taken up and sent to the Fruit Committee, with the request that they would decide its name.

H. H. Crapo moved that the Standing Fruit Committee be requested to report to the Convention to be held on the first Tuesday in October next, lists of the different varieties of fruits which they may consider as decidedly unworthy of cultivation.

S. Walker objected to the resolution as being premature, as such a list could only be safely given after long experience. The first conclusions were frequently erroneous. He said the *Vicar of Winkfield*, when it first bore at Boston, was poor and apparently worthless, and now they sold at \$1.50 for a box of a dozen, and the purchaser generally considers he has the best of the bargain. He said if he had extensive grounds he would plant it out for ornament; that it would produce more pears in the same number of years, and on the same number of trees, than any other sort. The Bloodgood, too, he pronounced, at first unworthy of cultivation; now he calls it one of the best. He therefore thought it was unsafe to instruct the Committee to make out a list of worthless sorts.

H. H. Crapo and W. R. Prince urged the adoption of the resolution. J. W. Hayes remarked that it would be difficult for the Committee to make out such a list unless for particular localities, and moved to amend the resolution to that effect. Hon. Jas. Arnold and A. Foote opposed the amendment. The former thought the whole matter might be left with the Committee. J. W. Hayes then withdrew his amendment.

S. B. Parsons thought there were certain varieties of long standing, which every one, in every locality, would pronounce worthless. Such could be safely placed upon a list of rejected fruits. When a single dissenting voice was heard respecting the worthlessness of any variety, it would not be placed upon that list.

The question upon the original resolution was then taken and carried, and the Committee were instructed to bring in another year, a list of worthless varieties.

The Fruit Committee reported that more time was necessary to arrive at the facts regarding the origin of the pear known as Swan's Orange, or Onondaga, and they therefore advise that it be referred to the Standing Fruit Committee to be reported on at the next session.

The Fruit Committee also reported that they have established the following grades to designate the quality of good fruits, viz: *Good, very good, best.*

Case apple, from Geo. Olmstead, reported *good*. *Smoke-house* and *High-top Pippin* apples *good*. The *Vicar of Winkfield* pear was called up again for discussion. The President was called on for information. He said it had been published, that if he had but one pear tree it should be of this variety; not because it was first rate in quality, but that it combined so many good characteristics. It never fails to produce a good crop, never is blown from the tree, can be used in August for cooking, will ripen in a warm room in October, and may be kept till February. The *London Pippin* apple was presented by Yardly Taylor, of Virginia. Referred to the Fruit Committee.

Dr. Hare was called upon, and made some interesting observations on the yellows in the peach tree, and diseases of trees in general.

On motion of A. McIntosh, it was

Resolved, That the President and Secretary be a Committee to confer with the American Institute relative to the expenses of this Convention, and that a copy of the transactions of this Convention be sent to each member thereof, and to all kindred societies in this country.

The President here was called into the Committee room, and Vice-President Crapo officiated.

On motion, *Resolved*, That a vote of thanks be tendered the American Institute for their liberality and courtesy towards this Convention.

On motion of Yardly Taylor, of Virginia,

Resolved, That the thanks of this Convention be tendered the President for the satisfactory and impartial manner in which the arduous duties of the Chair have been performed.

Also, *Resolved*, That the thanks of the Convention be tendered the Hon. James Tallmadge, for his valuable services in opening its proceedings.

Resolved, That the Secretary be requested to address a letter of invitation to the Hon. Edmund Burke, Commissioner of Patents, to take a seat in this convention at its next session.

The thanks of this convention are also due to the Secretaries for their efficient services—and also to Messrs. Peter B. Mead, A. P. Cummings and Samuel Allen, a Committee of the Board of Agriculture of the American Institute, for preparing the Hall for the use of the Convention.

A. J. Downing stated, that as he and other members of the Fruit Committee were absent in the Committee-room when the list of peaches were discussed, and therefore had no opportunity to answer the objections raised against George the 4th, Large Early York, and Morris White, he would now move that these varieties be reinstated in the list reported by the Committee. W. R. Prince and C. M. Hovey said that it was unfair to bring up that subject at so late an hour, when a large number of the members of the Convention had retired, and thought it better to leave them where they were till the next session of the Convention. A. J. Downing's motion was put and carried, and the Convention adjourned till the first Tuesday in October next.

The deliberations of the Convention were generally conducted with harmony, much information was elicited, the qualities of various new fruits discussed, and the following select list adopted, with confident expectations of a more extended list another year.

List of Fruits adopted by the Convention, Oct., 1848.

APPLES.

Early Harvest,	Rhode Island Greening,
Large Yellow Bough,	Baldwin,
American Summer Pearmain,	Roxbury Russet,
Summer Rose,	<i>And, for particular localities,—</i>
Early Strawberry,	Yellow Bellefleur,
Gravenstein,	Esopus Spitzenburg,
Fall Pippin,	Newtown Pippin.

PEARS.

Madeleine,	Seckel,
Dearborn's Seedling,	Flemish Beauty,
Bloodgood,	Beurré Bosc,
Tyson,	Winter Nelis,

Golden Beurré of Bilboa,
Williams's Bon Chretien, or
Bartlett,
Beurré d' Aremberg,

And, for particular localities,—
White Doyenné,
Gray Doyenné.

PEACHES.

Grosse Mignonne,
George IV.
Early York, *serrated*,
Large Early York,
Morris White,
Oldmixon Freestone.

Coolidge's Favourite,
Bergen's Yellow,
Crawford's Late,
And, for particular localities,
Heath Cling.

PLUMS.

Jefferson,
Green Gage,
Washington,
Purple Favourite,
Blecker's Gage,

Coe's Golden Drop,
Frost Gage,
Purple Gage,
And, for particular localities,—
Imperial Gage.

CHERRIES.

May Duke,
Black Tartarian,
Black Eagle,
Bigarreau,

Knight's Early Black,
Downer's Late,
Elton,
Downton.

OPENING ADDRESS

Of the 21st Annual Fair, on the 3d of October, 1848.

BY REV. J. O. CHOULES, of Newport, R. I.

MR. PRESIDENT AND FELLOW-CITIZENS:

WE meet under joyous circumstances, to celebrate the arrival of the American Institute at man's estate. This is its Twenty-First Anniversary. We assemble with happy auspices. The venerable men who rocked its cradle and watched over its infancy are here to witness its strength, rejoice in its character, and triumph in its successes. The day was when it was feeble and needed friends, and we thank God, our country's God, that he who raised up the pilgrim fathers and enabled them to lay the broad foundations of a happy land, and who nerved the arms and inspired the breasts of the patriots of the Revolution, provided clear heads and warm hearts to devise means for the encouragement and protection of our national industry. I think, that in this vast assembly there can be no American who does not this evening rejoice in his birthright—whose heart does not swell with patriotic emotion, as he looks around him and observes the undeniable evidence of his country's glory. How very unlike are our circumstances to those of the old and worn-out governments of Europe. There they are afraid of the people, and a disposition to congregate is regarded with horror by the rulers; here we use all means to gather them in masses, and regard the population as the true glory and strength of the land. In Europe, great results and splendid demonstrations are the consequence of large wealth concentrated in the hands of *a few*, and everything seems done by a comparative handful. Here the rich great man is hardly noticed, the government itself is scarcely felt, and *the people are all, and do everything*.

If a stranger go to Rome and his curiosity is excited at the grandeur of other days, and he asks the origin of all these spectacles of magnificence, he is surprised with repeated allusions made to Au-

gustus. Yes, Augustus! Augustus! echoes through the desolate domes and colonades, the broken aqueducts, the decaying circus and the desolate forum, along the banks of the Tiber, on the Flaminian Way, in her havens and sanctuaries, which time has left to record her former greatness. Augustus! Augustus! is still announced to the inquisitive traveller. And when the wanderer from this continent crosses the ocean and visits Britain, one of his earliest day dreams is gratified by the indulgence of his reveries in the majestic aisles and cloisters of the cathedral, in the romantic and awful solitudes of sacred edifices, where he is surrounded by the shrines of the sainted, and the tombs of the renowned and venerable dead; and when he walks through the time honored walls of abbeys, cathedrals and monasteries, he resembles the traveller at Rome: he asks the origin of these remnants of other days, but, instead of being reminded of some mighty individual who was the master spirit of the awful scenery, he is directed to a *separate class, a distinct order of men*. He may go from Jarrow to the solemn fane of St. Cuthbert, till he arrive at Tintern or Nebley, and in every case he will learn his indebtedness for his raptures to the clergy of the olden time. Colleges, cathedrals, hospitals and asylums were the work of *their* hands, the offspring of *their* wealth; and we are astonished when we compare their immense endowments with the pauperism and degradation of the popular masses.

The European traveller who lands in our country is astonished at beholding the evidences of prosperity on our shores, rivalling the refinement and progress which he left behind him, and incapable of forming opinions on a state of things so novel, he asks for the men of wondrous wealth who control the actions of their fellow men, and the great men who have wrought all these splendid appearances into existence; but there are none to satisfy his curiosity; he is only referred to the spirit, the energy, and intelligence of a *free people*; they, the people—the working people—the industrious handicraft people—the laborious farming people—they, the well educated people—they have performed the mighty transformation on this continent which has turned the wilderness into a fruitful field. This fair city, the great heart of a mighty country, has been created by labor, toil, virtue and intelligence. Our young people who now see New-York have faint notions of how it has been made what it is. They see the princely mansions, the splendid equipage and the aristocratic family, but they do not know the hard work, and the long, long years of persevering toil, which led to present appearances. I can go back in recollection a quarter of a century, and I know how very

differently men are placed from what they were, when I first knew them. The thrift and industry of past years have led to present affluence and splendor. Let not the children of the rich be ashamed to hear of the early employment of their fathers; let their only pride be in their own characters, their present personal worth and power. If there be a sight on earth that is preposterously ridiculous, it is the son of a rich man, who became such by daily honest labor, and who is now ashamed to hear of hard work or business. Here a man ought to be valued only for what he is; and how absurd is the affectation of family pride, where very few can look back more than fifty years without falling over a blacksmith's forge, or stumbling into a cobbler's or green-grocer's stall. It is an ordinance of Heaven, that man must be employed, or be unhappy. Mental or corporeal labor is the destination of his nature, and when he ceases to be active, he ceases to be useful, and falls to the level of mere vegetable life. If there be any truth at this moment which it behoves the people of the United States to ponder deeply, it is, that the wealth and gorgeous splendor of a few men who more than emulate the luxury of European nobles, does not constitute the prosperity of our land; it is the labor, the employment of all classes, the recompensed efforts of the masses, in town and country. The luxury of the few contributes very little to the general welfare of the Union. Had I a voice which could be heard by all the dwellers in the land, I would say, let our rising generation from north to south be taught the dignity of labor, the very blessedness of toil, and the misery of those who live without employment. I would say, let the fallacy be at once exposed, that colleges and universities are only to be regarded as avenues to the learned professions, and are good for nothing but to make lawyers, doctors and clergymen. They must give us men, working men; they must accomplish the education of mechanics, architects, agriculturists and chemists, men who can make life's labors go on quicker, easier, more surely; they must learn to dignify the *anvil* and the *plow*, or they will fail to accomplish their mission. Of colleges and universities, as they now exist, we have a large sufficiency, and perhaps more than enough. It is the common school, the school improved to the highest degree, and teaching the rich and strong sense of the language, and the science of the age, and blessing alike every family of the land, that sheds its genial light upon the people, and vivifies the germs of genius, and gives energy and equality of power to the immortal mind, and raises a rampart against the encroachments of arbitrary power, and a fortress which the selfish demagogue can never capture. Wherever liberty is established, education must be its companion or it will perish. Education includes *moral* as well

as intellectual culture: there are, as De Witt Clinton once said, "the Georgics of the heart as well as of the head," and we can only look to the general diffusion of knowledge as the ægis of our federal existence and representative system. And here let me say, that most of the benefits of a sound education and highly cultivated mind, may be acquired in our country by a young man who never enters the walls of a college, and who speaks no language but our glorious mother tongue, which God means shall yet help a man on every acre of this continent, and, I believe, all round our globe. But if parents are determined that their children shall live without labor, let them look forward to a posterity of listless, vicious, incapable characters, who will curse the memory of ancestors who failed to train up their children to live in obedience to the great law of their being, "*that no man liveth to himself.*"

The great service which this Institute has rendered to the country is, that it has showed to the people the intimate connection of commerce, manufactures and agriculture, and the immense importance of each of these great interests. The publications of the American Institute contain a body of statistical and political economics which cannot be matched in the United States. It has done nobly in working out a national independence of character. It has striven on through evil and good report to disabuse the public mind of the fallacious principle, that the true prosperity of a country depends upon its wealth; rather, says this Institute, on its physical strength, internal resources and moral greatness. Wealth has often destroyed, it never created a country. Our wealth and strength and prosperity all consist in the blood, bone, muscle, sinew and intellect of the people. *These*, and not the *Spanish Dollar*, are a nation's true riches. Oh, it is a narrow and miserable policy which looks at property only through the medium of the precious metals! and it is an ill lesson for the people to learn, whether it come from the professor's chair or from the government.

Never did the God of Nature ever form a country so calculated to support a happy people as our own. On the globe there is no such theatre presented for human happiness. The United States contain more than one-eighteenth part of the land of the entire globe, and many hundred thousand square miles more than all Europe. God has given us a mighty home; He has operated on a gigantic scale. Rivers, lakes, cataracts, mountains—a theatre replete with the sublime and beautiful. Our climate is salubrious—free from pestilence—our soil is fertile, so that famine is a stranger. If we advance in

all that renders a people intelligent, prosperous and happy, how will posterity regard the memory of those who laid the foundations of such greatness and renown. America is the world of progress. Social humanity is here to develop its energies without being counteracted and misdirected by antiquated institutions, based by tyranny on popular ignorance. Here we have few edifices to pull down, ere we rear our own fabric, and little to unlearn. *Forward, Forward,* is the cry, the strong cry, of the human heart. It is heard in France, England, Italy, Austria; it comes to us on every eastern wind, and is re-echoed by every dweller on this continent. The sun of liberty is high in the heavens, and will soon gladden every dark spot of earth. It is worthy of notice, that the principal objections brought against the American Institute come from foreigners who are in our midst, who have but a temporary residence; men who represent the capital of England, Scotland, France and Germany—the wealth of men who never intend to step upon our shores—these agents themselves, after obtaining wealth, return to contribute to the resources of their several countries. Instead of consuming the manufactures of Europe, it is far better to receive the manufacturing operatives, give them employment, consume their labor, afford them food, and give employment to the western farmer who raises the staff of life. If we cease to import the manufacturer's goods, the employment of foreign agents would terminate, and in their stead we should see the manufacturer himself, and he would receive the profits of his fabrics, and his interests and sympathies would all be with his adopted country—the land of his residence and home of his children. The creation of our own fabrics is the dictate of sound policy; and the mercantile agents of Europe well know, that in proportion as we improve and multiply our internal manufactures, we become independent, and instead of looking across the ocean for our necessary raiment and conveniences, we go ourselves into foreign markets, and compete with the old workshops of Europe.

We greatly need to imitate the simplicity of our fathers in our habits of life, and especially that love of country ever evinced by deeds of cheerful sacrifice for her service. If the great good men of the Revolution were to come back again to earth, I believe they would encourage our domestic manufactures to the exclusion of all unnecessary importation; and that they would not only hail the American Institute, the home league, and bid it "God speed," but they would strenuously urge the organization of voluntary association, and a united action all over the country to place American

Industry on a firm foundation, and render the people independent of the pauper labor of Europe. Nothing can ever secure this but the prevalence of a wholesome feeling throughout the whole community.

I place little confidence in any political parties; they can always be held in check by a handful of selfish mercenary individuals, who, to serve present ends and future prospects, are quite willing to throw overboard a patriot or a principle. I look to the sound, round-about common sense of the people as all that can coerce a party. Robert Hall wisely remarked, that heresies, political or religious, seldom or never take rise from the masses of the people; they are tenacious of their habits of thinking.

When we talk of simplicity of manners, we are not to forget the instructive lesson taught us by the history of other nations. Look at Rome; with the increase of her wealth and the extension of her power we see luxury and vice pervading the body politic, and integrity of manners and purity of morals gradually disappearing. Still she grows in power, and aggrandizes her wealth. She triumphs over Carthage, annexes Greece and Macedon as provinces, brings home Asiatic spoils, and carries her proud eagles into every land; and, in pride she exclaims, "by my strength and wisdom I have done all this." Yet, after making the whole world tributary to her glory, she sinks under the weight of her corruption. Let us listen to her sepulchral voice as she flits before us in historic retrospect, crying "It is an evil and bitter thing to sin against God." Let us not aim to extend our limits, or strengthen ourselves by rapacity and injustice. I know not of a more fitting occasion than when we meet to advance the useful arts, to utter a warning voice against the social evils which beset our path. How truly are we as a people made to feel that "Fashion rules the world," and, alas, what a tyrannical and capricious mistress she is! What sacrifices she demands and extorts from her votaries, and how contagious the example she sets. She makes it a vulgar thing for a man to help himself, and a genteel thing to lead a useless and vagabond life. She invades domestic happiness, disarranges the ordinary routine of every-day life, turns fond parents into fools, and their naturally healthy offspring into invalids, and converts society at large into slaves; and yet all classes and colours bend at her shrine, and the great strife is, who shall worship the longest and bow the lowest. I call on the opulent to be patriotic; let them become simple and frugal, for unhappily the sad consequences of the growing tide of luxury is to be seen among the less wealthy. They are fascinated by the example of

their affluent fellow-citizens, and regarding appearance as the passport to respectability, they are ready to sacrifice their all to acquire a comparative position in society. The fast growing luxury of our land is the deadliest evil we have to encounter ; it threatens to destroy " all that is precious in the boon which cost our fathers years of blood," and unless we fall back upon the example of those worthies, it will bring on us early national decay, and bury us with those nations whose columns and temples are now mouldering in ruins. Very few governments have sunk because they imbibed wrong ideas of civil codes necessary to their welfare. Industry, frugality and virtue, when combined, always do more to strengthen and cement a republic than the deepest speculations of her statesmen. It has been beautifully observed, " that the necessary impulsive forces lie not within the range or right of legislation ; they are correct dispositions and moral sentiments and habits of men." The perpetuity of any government depends upon the virtues and attractions of the firesides of the people. A thoughtful and well informed foreigner would rather come to this exhibition, or visit the Mechanics' Fair, at Boston and Philadelphia, to form his estimate of what our country is, and is to be, than go to the Capitol and listen to the men who manage to get there, and do what the great working masses of the people cannot afford to do,—look after other people's business. Here he would see the representatives of the arts, science, industry and genius of every part of the Union where labor and effort are thought honorable. He would see the teeming proof, the abounding evidence, that all over our land there are homes of comfort, and that we are a people dwelling amid the sweet charities and joys of life. I am glad to know that I am speaking to a people who have long shown their warm attachment and high appreciation of the American Institute. You know that it has fostered national genius, quickened the inventive powers of our fellow-citizens, introduced improvements into every department of life, thrown a protection over the poor and youthful mechanic, when he had to encounter ridicule from those who could not understand his discovery, or see excellence in any thing which other men had devised.

You know that it has brought the East and West together, and while it has " cared for " the hard-laboring mechanic in his city workshop, and the daily toiling manufacturer by the side of the country stream, it has also extended a healthy patronage to the hardy tiller of the soil, more favored than his brethren, living in heaven's own sanctuary—the green woodside, and worshipping God in calm

serenity, peace his pillow and piety his guardian angel. How many an arm, Sir, have you by your efforts made strong to labor? how many a breast have you filled with manly aspirings after improvement and excellence; and how have you sown broadcast over the land the seeds of certain progress and ultimate excellence. I wish that this Institute had an energetic actuary or agent whose sole duty it was to visit all portions of our country, address the farmers of every school district, drop the suggestions of science and good taste at every way-side, and especially that he should in his conversational and set addresses, strive to cultivate the home feeling, and multiply the points of attraction and comfort in the country residence; for, I believe, that the snug, quiet and resistless beauty of a sweet rural home is most favorable to the development of the qualities of the heart. A small place may be made a very paradise, and there is a tranquil beauty which could be created around the cottage of every man, which should endear that little spot to his children's children. I cannot forbear the remark, that great men have ever been remarkable for their attachment to snug dwellings, and men of the sublimest conceptions have been housed in narrow, yet tasteful habitations. I like that letter of Napoleon Bonaparte to his brother Joseph on his return from Egypt:—"Secure me a small house in the country near Paris, or in Burgundy." No land on the globe ought to boast of lovelier homes than those of our free citizens, who own the soil, and have such heavens over them and such earth beneath their feet. Let me pass from a small house to a large one. You have goodly houses in this glorious city, but you greatly need another. The country's good demands an edifice in New-York adapted to the proper accommodation of the American Institute. It ought to rise promptly, proudly, in your city. It ought to be, what it would be, the great attraction of the strangers who are perpetually within your gates. The American Institute causes an immense annual visitation to the city; it crowds your unequalled hotels, throngs your attractive places of public business and resorts of pleasure, and presents claims for extensive patronage upon every landed proprietor and business man. Nor do I believe that an appeal to the enterprising and munificent citizens of this great emporium would fail to secure the desired amount of means. Innumerable are the great and good results which would flow to the cause of our common country from a suitable building where arts and science, and invention and labor, could find *their home and their aliment*, and where the thousands of our youth, as they were carried to witness the ingenuity and glory of their country, might joyously exclaim, "*We, too, are Americans.*"

[Assembly, No. 244.]

B

Mr. President, I congratulate you on the position which you are again called to occupy ; you have often been honored by your fellow-citizens ; your voice has been heard sounding the tones of liberty in the councils of the country, when the hearts of freemen were failing them for fear. Your voice has never been heard excepting in the cause of human welfare ; but, Sir, you never filled a prouder seat than that which you now occupy. On behalf of the Managers of the American Institute, I bid you welcome, fellow-citizens, to the festival now open to the thousands of New-York, and those who will crowd to it from other parts of the land ; and if, as you survey the ingenuity of our artisans, the skill of our manufacturers, the persevering industry of our farmers, the taste of our florists, and the beautiful fabrics of American matrons, you should happen to say, " We are a great people," the evidence and proof around you, on every hand, will go far to save you from contradiction.

ADDRESS

Delivered at the Ploughing and Spading Matches at White Plains,
Westchester Co., N. Y., Oct. 5, 1848.

By ROBERT BOLTON Jr., (the historian of Westchester County.)

Mr. PRESIDENT—

The American Institute of New-York, with the laudable design of advancing the agricultural interests of this county, have appointed their Annual Ploughing and Spading Matches to be held here this day, in connection with the Fourth Annual Fair of the Society of Agriculture and Horticulture of Westchester County. They have also honored the speaker with the pleasant task of delivering to you their views in relation to the great subject of Agriculture.

The importance of husbandry to all the substantial interests of the human race is so fully recognized that it is almost unnecessary for me to enlarge on the attention to which it is entitled; or to insist on the great advantages which those nations enjoy, by whom it is most successfully practiced. Some of the greatest minds the world ever produced, have assigned to Agriculture a superiority over every other art, and a pre-eminence over every other mechanical trade; while it has been seen that individuals, even of elevated rank, may engage in the cultivation of the soil without descending from their high station.

Such was the opinion of the illustrious Washington—an opinion among the very last communicated to his fellow-countryman—that “agriculture is the most healthful, the most useful, and the most noble employment of man.”

It has been well observed, that “that great man knew, and all great men know, that the cultivation of the earth is our very first and most delightful duty. That Paradise lost by transgression can only be regained here on earth by the sweat of the brow, in clearing away

thorns and briars, and causing our vallies to exhibit their golden harvests, and our gardens to blossom with roses."

For what object, then, may I ask, are we assembled in these fields to-day? Is it to meet the foe on old Chatterton, yonder, where Washington intrenched himself with his gallant band of patriots? No! my fellow-citizens, we have good reason to be thankful to that God, who is "the author of peace and the lover of concord," that no bugle sounds this day to summon us, as it did our fathers, to that hill-top, in this very month, 1776.*

But rather, that we meet here as the friends of peace, willing to have our swords beaten into ploughshares. Surely we can say, with the sweet Psalmist of Israel, that "the lines are fallen to us in pleasant places—yea, we have a goodly heritage."

Mr. President; although other avocations may offer greater prizes in the lottery of life, yet if we compare the advantages of rural industry with those of any of the common occupations to which men devote themselves, we may venture to affirm, that he who is engaged in agriculture has no reason to be dissatisfied with the lot which Providence has assigned him. Its superiority, in point of salubrity, over every sedentary employment, is too apparent to need illustration; and it affords more of those common enjoyments which constitute much of the elements of happiness, than any other state of equal mediocrity. The farm-yard, the orchard and the dairy, supply, almost without expense abundant means for those gratifications usually termed the comforts of life; besides many luxuries that are beyond the reach of people of humble means. It is true that, it has its toils and its cares, and those neither few nor slight—and perhaps the farmer's life is more laborious than any other; but then, his home is far removed from the crowded alleys of a city, and the morals of his children are not exposed to the contaminating influence of a densely populated manufacturing town. The farmer passes his days in the healthful labors of the field, while the mechanic or shopkeeper wears away his life at the loom or the counter. Perhaps there is no man who earns his bread by the favor of the public who enjoys independence in an equal degree with the farmer. His business, though subject to more casualties than almost any other, is yet so divided among many risks, that he is rarely exposed to the hazard of total failure; the same weather which injures one crop often improves an-

* This address was delivered in view of Chatterton Hill, the scene of the battle of White Plains, 28th Oct., 1776.

other, and the very difficulty of a critical season offers a field for exertions by which he is frequently a gainer. "In twenty-four years experience upon a considerable scale," says Mr. Pitt, an English farmer, "I always made the most money in difficult seasons." Possessing on his land all the means of life, he is under no corroding anxiety regarding his daily subsistence; he is removed from those collisions of interest and those struggles for precedence which rouse the worst passions of the human race; and his constant observation of the wise provisions of nature, for the care of all her creatures, can hardly fail to impress him with a full belief in, and reliance upon, that God which made "the round world, and they that dwell therein."

In fervid language, the poet advocates the claims of Agriculture to public consideration:

"Thou first of arts! source of domestic ease,
Pride of the land, and Patron of the seas—
Thrift agriculture! lend thy potent aid,
Spread thy green fields where dreary forests shade;
Where savage man pursues his savage prey,
Let the white flocks in verdant pastures play;
From blooming orchard and from flowery vale,
Give thy rich fragrance to the gentle gale;
Reward with amplest boon the laborer's hand,
And pour thy gladdening bounties o'er the land.
Columbia's sons! spurn not the rugged toil—
Your nation's glory is a CULTURED SOIL!
Rome's Cincinnatus, of illustrious birth,
Increased his laurels while he till'd the earth,
And China's monarch lays the sceptre down,
Nor deems the task unworthy of the crown."

It may be safely said, that nothing is better calculated to enlarge the mind, and to extend the sphere of our rational pleasures than the contemplation of the economy of nature; while to those who set a due value on intellectual enjoyment, the study of agriculture offers an inexhaustible fund of amusement, as well as instruction. The mere occupation of the mind in tracing the origin and progress of any new improvement; will be found productive of the purest gratification. It has been well observed by Sir Humphrey Davy, that "the frequent failure of experiments, conducted after the most refined theoretic views, is far from proving the inutility of such trials; one happy result, which can generally improve the method of cultivation, is worth the labor of a whole life; and an unsuccessful experiment, well observed, must establish some truth, or tend to remove some prejudice."

What wonderful changes have been wrought in the vegetable kingdom by the arts of gardening and agriculture! How many herbs that were once considered worthless, are now cultivated among the most valued, as well as the most common of our table vegetables. Several of those now grown in the fields, were, at no very distant period, little known, or considered as garden delicacies, and exclusively confined to the tables of the rich; and it has been conjectured that not one of the numerous kinds and varieties of fruit, now found in our gardens and orchards, are what they were in their aboriginal state, but are the offspring of accident or skill.

According to Sir Joseph Banks, the potato, one of the most important culinary vegetables of the present day, "was first introduced into England from America, by the colonists sent out by Sir Walter Raleigh, in 1586.* It was first cultivated in Ireland by the grandfather of Sir Robert Southwell, from tubers given him by Sir Walter Raleigh." At this early period it was looked upon as so great a rarity, that it was only planted in small quantities. In the year 1619, the common market-price of the potato was one shilling English per lb. For a long time it was treated as a fruit, baked in pie with spices and wine, or eaten with sugar; and nearly two hundred years elapsed from its first introduction before it was cultivated as a field crop.†

Since that time what rapid advances have been made in Agriculture by the aid of our State Fairs, the American Institute, and our County Societies! It has been truly said, that the ^a great business of America, at the present day, is Agriculture, for already has nature written upon her—'*The Granary of the world.*' Two hundred millions of human beings can draw their sustenance from the

* In De Bry's collection of Voyages, he describes a plant called *Opotant*, which is, in all probability, identical with the potato. Gerard, in his *Herbal*, published in 1597, figures the potato under the name of the potato of Virginia; hence, he says, he received the roots.

† "The chemical, physiologist will tell you that the well ripened potato, when properly cooked, contains every element that man requires for nutrition, and in the best proportions in which they are found in any plant whatever. There is the abounding supply of starch for enabling him to maintain the process of breathing, and for generating the necessary warmth of body; there is the nitrogen for contributing to the growth and reparation of organs; the lime and the phosphorus for the bones, and all the salts which a healthy circulation demands. In fine, the potato may well be called the universal plant; and the disease under which it now labors is a universal calamity."—*Professor C. U. Shepard's Address, delivered before the Agricultural Societies of Hampden and Hampshire Counties.*

soil of the Union, and still, under scientific cultivation, it could afford bread to a continent as large as Europe. Such is the fact, for it is estimated on good authority that the harvest of the United States, this season, is sufficient to feed half the people on the globe. With scarcely one exception, every species of grain, fruit, and vegetable, is yielding throughout the country an extraordinary crop. Of beef, pork, butter, cheese, &c., there is the same plenty; and while our population are secure of every comfort and luxury in the way of food, we shall have a surplus sufficient to meet all the famine that may occur in the known world."

Nor has the American Agriculturist, we may safely say, reached the ultimatum of his intellectual destiny, for we are, in fact, but in the *dawn* of the scientific Agricultural day.

It is but one hundred and seventy-four years since, that the site of the present village of *White Plains* was the hunting-ground of the Indian Chief, *Orawopum*, and his warriors.* Now, behold what a change has taken place; how altered is the scene! mighty forests have been swept away—fields have been cultivated—a thriving village takes the place of the rude wigwams of *Quaroppas*, and the shrill whistle of the locomotive has superseded the Indian war-whoop. Wonderful transformation, who can realize it!

Farmers of Westchester! to you has Providence assigned this portion of the EMPIRE STATE, whose proud motto is "EXCELSIOR." Be it your first and last duty, therefore, to assist in extending, by every means in your power, the bounds of Agricultural science; for should you prove untrue to your profession, depend upon it, the loss of wealth will come upon you; and what is worse, shame will cover your faces when you hear of the success of agriculture in other lands.

It is a remarkable fact, well deserving of notice, that notwithstanding the rapid strides which agriculture has made, both here and in Europe, within the last fifty years, no science has been slower in its progress towards perfection. The reason of this is, there has been, and there still is, a great want of that practical knowledge by which

* Upon the 22d of November, 1683, the inhabitants of Rye purchased of the Indians "all that tract of land commonly called, by the English, the *White Plains*, and by the Indians, *Quaroppas*."—*History of Westchester County*, vol. II. p. 239.

alone we can understand the first principles of the science. Acquirements have been mechanical, books despised, and every new improvement rejected as the delusive schemes of new theorists, even after their value has been well ascertained. Prejudice, too, obstinately rejected things, simply because they were innovations on the practice of our grandfathers.

An uncultivated farmer, who is a mere delver in the sod, has been well compared to a "mere machine that annually produces so many bushels of wheat; a mere pile of nerves, muscles, and bones, that

————— lives as the father lived,
Dies where the father died, and thinks the moon
That rolls above the head, no larger than
The father's shield."

To use the language of one of our best writers on husbandry: "Prudence, therefore dictates the necessity of caution; but ignorance is opposed to every change, from the mere want of judgment to discriminate between that which is purely speculative, and that which rests upon a more solid foundation."

The same author continues: "The prejudices of farmers against all innovation upon their established habits, are as old as agriculture itself. In the dark ages of superstition, a man who, by any improved method, contrived to grow larger crops than his fellows, was supposed to use supernatural means; and if he escaped prosecution as a wizard, was at least shrewdly suspected of dealings with a power whom his more pious neighbors carefully avoided." Pliny mentions a freedman, who made his vineyard produce crops so much larger than those of his neighbors, that they accused him of witchcraft, and accordingly brought him to trial. When he appeared in the forum he produced a stout daughter, and some excellent implements, as iron spades, shears, &c.; and in presenting these, together with his oxen, to the Senate, he uttered those memorable words: "These, Romans, are my charms." Upon which he was honorably acquitted. Other instances might be adduced, but one shall suffice: "On the introduction of hops into England, the city of London petitioned against their use, lest they should injure the beer." New implements, too, have been opposed, much upon the same principle as the objection made about a century ago, in Scotland, and so humorously as well as truly related by Sir Walter Scott, to the use of the winnowing machine. "Your leddyship and the steward hae been pleased to propose that my son Cuddie suld work in the barn wi' a new-fangled machine for

ighting the corn frae the chaff, thus impiously thwarting the will of Divine Providence, by raising wind for your leddyship's ain particular use, by human airt, instead of soliciting it by prayer, or waiting patiently for whatever dispensation of wind Providence was pleased to send upon the sheeling hill."

And even the most unprejudiced have much to contend with in the management of a farm; unforeseen difficulties will occur that baffle experience and repeated trial, so that it is often difficult to distinguish that which is really useful from that which is worthless. Much practical knowledge, however, may be obtained by adopting the improvements of others—particularly Bakewell's advice to his friends, "*To go and see what others are doing.*" "By this he means he will be enabled to compare in the most effectual manner, their fashions with his own."

Farmers of Westchester! the American Institute, in its well-known zeal for the promotion of every agricultural improvement, this day invites you to come and "*see what others are doing,*" and what can be done with the plow and spade, in a style infinitely superior to the old mode. By a close observation of the various competitors you will be able to see for yourselves the improvements which have been effected in that most important implement of husbandry, the *plow*, in which there has been an entire revolution, both in the kind of material used, and in the general form and construction.

The Massachusetts Society for the Promotion of Agriculture is said to have taken the lead in the institution of ploughing matches, and the offering of premiums for the best plows, which gave the first decided impulse to improvements in this direction. Their first plowing match took place at Brighton, in October, 1817.

The offer of premiums for the best plow, by this and other associations, soon followed; and by the competition which was thus in various ways created, improvements were started and pushed on, till at the present time a degree of perfection has been reached in some of the best constructed plows, in which it seems almost impossible to make any further improvement, such is the mechanical invention of man, as applied to one of the noblest implements of husbandry. May we fully appreciate this best gift the ingenuity of man ever invented, and promote its use in every arable spot in this vast country, until millions acknowledge the triumphant success of agriculture.

Before concluding, I am happy to say, that the American Institute has petitioned the Legislature for the endowment of an Agricultural College and Experimental Farm, with a view to a scientific and practical education in this noble art. The well-known disposition of our Legislature for every thing that can improve the character and condition of our people, insures its success.* We cannot express a better wish, or one in which I am sure you will all more heartily join, than

“GOD SPEED THE PLOUGH.”

* While this was in press, Governor Fish, in his Inaugural Address, strongly recommends the establishment of Agricultural Schools in this State.

ANNIVERSARY ADDRESS

Before the American Institute, on the 12th of October, 1848.

By the Rev. STEPHEN H. TYNG, D. D., of New-York.

MR. PRESIDENT AND GENTLEMEN OF THE AMERICAN INSTITUTE:

My appearance before you in the attitude of a speaker on this occasion, has been most unexpected to myself. I trust my audience may be plainly informed that at the last moment of expectation, your appointed and highly qualified annual orator failed to come. Doubtless his well stored mind would have poured forth before you rich and attractive instructions upon some chosen department of the great subjects which engage your attention and care. Why, in this great community of learned and intelligent men, you should have selected myself as a substitute upon such an occasion, and so earnestly pressed upon me the fulfilment of the task which imperative duty had required him to leave, I know not. Gladly, indeed, would I have shrunk from a duty, for the proper discharge of which, the pressure of unceasing labors, with health by no means robust, completely disqualify me, even had I time allowed for thought. But in such a corner of opportunity as you have placed me, what merit can I have, other than a disinterested sacrifice of comfort, perhaps of reputation, for your pleasure, and an honorable failure, in the attempt to do something to prevent an absolute blank in your expected anniversary. I have felt in reference to your earnest and repeated solicitations for this effort, much like saying with the old patriarch, "if it must be so now, take of the best fruits of the land in your vessels; a little balm and a little honey, and myrrh and spices, and nuts and almonds," and go down, peradventure kindness will receive an offering, however mean, which is the best you have, or in the time are able to obtain.

The great and interesting object of your Institute I understand to be the encouragement of domestic industry, and of the improvements

which domestic skill may call into being, in application to agriculture, commerce, manufactures and the arts, by bestowing rewards and other benefits on those who shall make any such improvements, or excel in any of these branches of industry and skill. That is, your purpose is to *elevate and dignify American labor*; to bring out the latent energy and skill of American minds, and to make the devotion of genius and time to industrial and useful employment and invention, as honorable as it justly deserves to be, and as exalted in the opinion of surrounding society, as the combination of such an array of men and minds as compose your Institute, to approve and applaud, are able to make it. It is not a condescending effort of the high to exalt the low, or of the peculiarly cultivated to elevate and benefit the less refined and privileged of men. But it is a mutual agreement, to honor that imperishable element in man, which the power of his Creator has implanted within him; and to excite and cultivate to the highest possible degree, by an honorable competition, the skill and effort of man for the improvement and elevation of his present condition of being—not for the mere attainment of the means of luxurious indulgence, but for the widest disposal of benefits upon mankind; for the utmost melioration of the difficulties, and enlargement of the advantages which the wisdom of the Creator has appended to the human station. No object beneath the effort to secure and bless the future immortality of man, can be considered greater or of more importance. To enter upon any fair consideration of this subject in its details of application, or in its minuter calculations of present advantage and gain, is utterly impossible for me. I cannot undertake, nor can I suppose it expected of me, to give a learned lecture upon the statistics of agriculture or the arts; or to attempt to harangue such an association as this, upon the principles of political economy, or the various schemes for political advancement. I must be content with a view entirely superficial, and which, to the mass of educated minds around me, can have no other merit than the cheerfulness of spirit with which it is offered.

It is this moral dignity of human labor which forms the rightful connection of the present occasion with the more peculiar habits and duties of the christian teacher, and opens a door through which he may enter, to mingle his congratulations, and express his delight, over the amazing and multiplied products of human skill, and evidences of the mighty and still undeveloped power of the human mind, which your annual exhibitions present. What is the great purpose and the real result of christianity among men, but the ut-

most exaltation of man as an individual, and the cultivation of the mutual honor of man for man, in proportion, not to the adventitious contingencies of his birth, but to the moral and mental attainments which he acquires for himself, and the benefits of which, in their exercise, he bestows upon others? When christianity condemns and humbles, it addresses that in man which dishonors and destroys his race; when it approves and exalts, it speaks to that which elevates, adorns and enriches the human family in all its relations. Nothing more distinguishes the christian system than this—its tendency to elevate the condition of man—to acknowledge and honor the varied powers and the individual skill which the Creator has imparted to men, to encourage their exercise, to cultivate their operation, and to open and prepare, in its general influence upon society, the widest possible field for their honorable and successful display. It is not only the fact, that all the arts and improvements of civilization follow in its train, so that its history may be written in the present benefits which it has conferred upon mankind; but this progress in human improvement has originated from itself, and is seen in its exhibition, just in the degree in which the principles of justice, liberty and truth, which this divine system teaches, are acknowledged and established among men. The whole history of the prosperity of our country, whether general or sectional, will bear out to a demonstration, the assertion, that not to soil or climate, or sea or land, or zones or temperatures, or valleys or mountains, or rivers, are we indebted for the wonderful display of genius and skill, and industry and resulting wealth, by which our nation has been marked, but to the elevating influence of christian education upon youthful minds, and upon the society in which they have been trained, dignifying as the most honorable condition of man, free labor upon a free soil; making the cunning artificer a perfect equal to the eloquent orator; exalting the head that has humbly bent, through many a toilsome day, over the bench of industry, to preside with a dignity which commands united reverence upon the bench of judgment; and leading the feet that have followed through many a weary furrow in the field, to stand on a level with statesmen in the councils of the nation.

There is that, in all the influences and promises of this system of heavenly light, which is precisely adapted to excite man to stir up the gift that is in him, to make him feel that he was made to serve no master but God—to call him out to the utmost effort, in mental competition, for the improvement of his race—to make him despise himself inferior to no undertaking to which the law of his nature

right and duty shall lead him—to give him patience in effort, coolness in judgment, skill in discernment, and determination in execution—the elements of indubitable and certain success: and whether the wilderness blossom like the rose under his skill in agriculture, or the works of his hands seem almost to live, and speak, and act, in the beauty of his mechanical invention, christianity honors his effort, and commands men to honor and protect the claims which it originates. It prepares a state of public mind, which smiles encouragingly upon his attainments and productions, and which confesses the honor that the whole community justly feels in having in its bosom, and cherishing as its own, individuals who have so distinguished themselves and their race. I cannot walk through the innumerable varieties of skill, and testimonies of talent and thought which the present exhibition contains, without asking, with delighted triumph, what people but a christian people have ever exhibited powers like these? or where, but on the soil on which christianity secures to man the peaceful possession of the work of his own hands, and the honorable acknowledgment from others of his rights and powers in the productions of his skill, have such demonstrations of what there is in man, and of what man may accomplish, ever been seen? Far, then, do I feel from stepping aside from my own peculiar line of duty, in co-operating, in my poor way, to encourage such efforts, or from supposing that I am not about my Master's business, in rejoicing over all the dignity that human industry can attain, in the rightful exercise of its skill, and the comforts and advantages with which it can clothe the condition of man.

Mr. President,—To you and to your honorable associates is given this eminent privilege, thus to exalt the mind and condition of your fellow men; by the creative power of a wholesome stimulus, to bring out their secret energies, and to make them see and feel for how much higher purpose the free sons of America were designed, than either to wear the livery of a despot, or to brutalize their nature in causeless blood. You preach the dominion of peace, and every implement and invention which you set up around you seems to answer you in strains of gratitude for your fostering care, and to hold the olive branch of encouragement still to others, while it declares, that better is he that thus ruleth and exalteth his own spirit, than he that taketh a city. The influence of such an exhibition is eminently elevating and pure. And you are carrying out, in a very important degree, the collateral benefits and purposes of Christianity among men, while you stimulate to these contrivances for human happiness, and set up the arts which are indigenous only in the peace which

Christianity commands, and which combine to promote the moral dignity and elevation of the human station in its aspect of labor, for which Christianity contends. In this connection the fact has been very striking to my notice, and has arrested my meditation among the beauties of the gorgeous scene which you have arrayed, not only what peaceful time, and secure and protected hours have been employed, over which the ægis of just and equal laws has been spread by day and night; but how peaceful is the very nature and language of the articles themselves;—one little case of pistols, as far as I could see, is the only preparation for war and death, or even for human suffering, in your whole collection, and that surrounded, as you have placed it, by confectionary, looked like a scowling stranger there—a tattooed New-Zealander among the smiling children of Christian America. I could not but think as I noticed it, that human skill, after all, was more honorably and profitably employed in making sugar-plums than pistols; and that better, even, are the vainest provisions for individual luxurious indulgence, than the most consummate productions of art for mutual destruction among men. Let us labor, at any rate, to nail up the doors of Janus, for our people, however comparatively trifling may be their employments around.

The effect of this display of skill in your exhibition, upon every mind is peaceful and happy. No immoral lesson is taught there; no revenge or licentiousness, or appetite for blood, or even covetousness for plunder, is excited by the scene. Humanity, kindness and virtue, and reverence for the property and rights of men, are cultivated there, and under the influence of the moral dignity and elevation which are there displayed, men feel happier and better, more contented and more encouraged, as they mingle with the throng, and return again to their various homes. In this very influence, you are doing a great work for the moral benefit of your country—uniting in the spirit of brotherhood and affection all your fellow-citizens, by encouraging the arts of peace, and accomplishing much to resist the dominion of lust, and the anarchy of crime.

But beyond this, the elevating influence of your association is felt in the encouragement of multitudes of mind to future efforts. You are thus doing much to enlarge the future greatness, and to adorn and substantiate the peaceful glory of your country. How pleasant it is to see our youth interested and engaged in such a scene as this! I have watched them as they have intently examined some beautiful products of skill—striving to understand the operations of some liv-

ing machinery—listening to the explanations which are offered of the work; marking with admiration, what others have been able to accomplish; feeling a living incubation, a mind-stirring within themselves, conscious of thoughts and powers which they never knew before; awakening in the determination to test their own ability in contrivance and opening their eyes to the fact, that they too, are sculptors, and architects, and machinists. Thus you are nurturing your future Fultons and Fitches; while many another boy may whittle out a block with his knife, and feel that he is a Powers; or paint with the tail of his mother's cat, and realize that he is also a West. You have there the beautiful cameos of a struggling youth, whose talents, yet unencouraged and unnoticed, sprang into being in making wood cuts at a school at a country village. And it is by your fostering care, and approving smile, that such secret energies are to be brought forth, and your country is to have sons for universal exhibition, in whose names she will glory; and over whose masterpieces of art, and beauty, and profit, the world shall bend in lasting admiration. Now all this is a work and an end entirely collateral with Christianity. And while we cannot but feel, that upon such endeavors to improve the condition, exalt the nature, and dignify the peaceful employments of man, the smile and the blessing of his Creator, must rest, we must also acknowledge it a work, in which the Christian teacher may justly unite, and through which, as one of its agencies, Christianity itself will prosper and triumph.

But this moral dignity of labor is also purely an American scheme and thought. It has marked our country's history, from the earliest periods of its colonial establishment; not more arising from the first struggling condition of its original settlers, than from the very principles with which they emigrated; and upon which they determined to erect the empire which they founded. It is undoubtedly true that labor was at first the necessity of their being. Hands and arms that had never toiled before, were required to toil unceasingly upon the rugged shores which were selected as their future home. And in this very fact, a dignity was given to human industry, which had never before been connected with it in modern times. The Winthrops, and Johnsons, and Endicotts of that day, would have dignified any station in life. And when they were seen, hewing out their future independence from the wilderness, and rearing their partial but honorable subsistence from a sterile and unwilling soil, never had the axe glittered with such light, or the plough moved with such majesty before. It is the character of the man which marks the standard of the employment in which he is engaged. But no place

or work can permanently exalt a man who is in himself unworthy of the reverence which his calling may demand.

I knew one of the most dignified, learned and elegant of the last generation of the sons of Connecticut, who exercised an unlimited hospitality, in a retired residence, upon exceedingly limited means; who, for want of other hands to do the work, himself habitually cleaned the shoes of his guests after they had retired to rest. And when remonstrated with upon the indignity to which he thus subjected himself, he simply and happily replied, "It is my only way to wash the disciples' feet." No station could exalt such a man; and boot-blackening, in his hands, rose to a dignity, which in this country, luxurious idleness, though charioted in wealth can never command.

I knew a venerable son of the Revolution, who, in the professional studies of his early manhood, when in midwinter foreign invasion had driven a widowed mother, robbed and in poverty, from the seacoast town, several miles to an interior village, harnessed himself to a sled, that he might drag her on the Sabbath back to the church in whose communion she desired to unite. In the spirit which was thus cultivated, an honor was affixed to labor, and in the general feeling of the people, there was transmitted a moral dignity as connected with industry, even in the very lowest shapes, in which the needs of man required it; a dignity which, I rejoice to say, has remained an American principle, and which the present generation of our countrymen seems determined to perpetuate. The extreme difference between this general feeling, and the whole moral condition of the eastern continent, is a very remarkable fact. Throughout monarchical Europe, (an epithet indeed, which seems now almost an epitaph,) the permanent distinctions of castes and classes make labor disreputable, and give no encouragement to the general enlargement of the human mind, or to the innate ambition of individual thought. Agriculture is in the hands of a *peasantry*, (a title which I trust, American farmers will never agree to bear;) a peasantry who must live and die in the rude hamlet in which they were born; whose ignorance must never be enlightened beyond the clumsy implements of culture which their forefathers have used; who must feel themselves marked and distinguished, as the mere tolerated denizens of a soil which can never be their own; whose fare is of the coarsest and meanest provision which can sustain the life of man, and the average wages of whose labor is, in Austria, less than one seventh, in France less than one third, and even in England, less than one half of the average of agricultural wages among the freemen of

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America. Attempts to rise above this state, to attain a position in which man may have his honor as a man, and exercise a better influence upon the destiny of his own family, or his fellow men, far from being considered a virtue which is to be encouraged, or a right which is to be acknowledged, is a crime for which men are to be shot.

One beneficent operation of the first French Revolution, in the midst of all the horrors of its spirit, and its march, has been to break up this system of servile peasantry, and to multiply indefinitely the owners of the soil. But even in the agriculture of France, the mildew of the past is still thickly coated upon the efforts and hopes of the present; and the minds of men, cramped in infancy like the feet of the Chinese women, by an unnatural and detestable pressure from without, are feeble and slow in all attempts to run in a new path, however attractive and promising.

In mechanical labor and skill, the absence of all honor as an habitual attendant, is in Europe equally manifest. I know that luxury purchases, often at a great price, the beautiful results of handicraft and skill. I know that individuals of boldness and energy—those irrepressible spirits whose elasticity no bounds can limit—have occasionally forced their way through all this downward pressure, and have compelled an acknowledgment of their greatness, and a respect for their mighty developments of mental and moral power, from those titled tribes who habitually fancy their interest to be in widening the gulf of separation, and insulating their own condition as completely as possible. But what are those among so many? Their class are tradesmen and tradespeople still. And the habitual fact in their history is, not only no encouragement to rise, but great discouragement and jealousy of their possible ability to break the shell of caste, whose accumulated scales ages have riveted over them. European mechanics feel this fact of discouragement and dishonour, and feel it deeply.

I stood the other day by the bench of an English mechanic, whose remarkable skill I was admiring, and the genius of whose youthful son in his work I was noticing, when the father took from the drawer some beautiful crayon and pencil sketches, which this working boy had made. "Ah! sir," said the father, "this is America. My boy was taught all this for nothing, at your public school. Had I stayed at home, he would have lived and died unnoticed at the bench. Here he may take a stand, and be honored and encouraged." Yes, and

this is but one of multitudes of instances of illustrations, which a knowledge of facts would bring out, of the encouragement which American freedom gives to innate talent.

I knew a poor English carpenter, who with the utmost difficulty gathered the needful bread for his family. His children were placed in the public school of a neighboring city. His eldest son, having no chance of education before, laid hold of his opportunity greedily, passed with honor through all the stages of public education, at the public expense; and on his graduating at the summit of the career of the city's provision, was immediately appointed a teacher, and is now a professor of ancient languages in one of the highest institutions, and honored the more for the industry which has made him, from neglected poverty, what he is. This is America. That boy might have lived and died a beggar in the streets of London, and no titled man have taken him by the hand, to bring out, in an elevating education, the noble powers his Creator had implanted within him.

It is true, there was a period when enterprise in our country seemed comparatively dead—when unbelief in the destinies of our nation appeared to have supreme control over many minds—when neglected Fulton sailed his steamboat upon the Collect Pond, amidst the indifference of a surrounding multitude—and when despondent Fitch, amidst the reproaches of his insanity, propelled his keel by steam on the bosom of the Delaware, disregarded, ridiculed, and left to perish in poverty.

I have often wondered at this amazing apathy as a characteristic of that generation. But I should speak of it rather as a strange mingling of a foreign mind with ours, as something which was wholly un-American in its character—a crisis, at which the individual energy of the earlier days had mainly passed, and the glorious combinations and plans of "the American system" had not yet started into being—a period when there was but limited ability to encourage undertakings which seemed so vast, and so much beyond every thing which was actual and visible around men.

But these very facts, painful as they are, remain, to set out in strong colors the wisdom and justice of your present course. And while the prophecies of these pioneers in steam navigation, at first so much neglected, have been already more than fulfilled, you are now the more countenanced and confirmed by them, in giving encour-

agement to rising talent, and in allowing no future effort of American skill to remain unnoticed or unwelcomed. In this peculiar American spirit there has been an admirable progress in later years. Great encouragement has been given to ingenious and useful inventions. A system of protection and fostering, peculiarly American, and peculiarly honorable to America, and indispensably necessary to her greatness and prosperity, has called forth the energies of our countrymen, and watched over and guarded their property in the issues of their skill.

In agriculture, every year is advancing the application of the sciences to the cultivation of the soil; so that in some of our leading colleges, agricultural chemistry has been constituted a separate branch of instruction, to employ the labors of a distinct professor. Mechanical skill has been devoted to simplify and perfect the operations of the farmer, to a degree which the most instructed of European husbandmen would hardly credit. The application of science to the arts is increasingly a leading feature in its study. With what admirable effect it has been already adapted, the vastly improved colors and fabrics of our various cloths every where declare. The beauty and variety of the machinery which has been created, the cleanliness with which manufacturing establishments are maintained, the moral purity and elevation which has thus far reigned unbroken around the very largest of American manufactories, but above all the universal education and mental advantages which are freely provided for every class of operatives, so that the girl from the factory may become, without difficulty or remark, the teacher in the seminary, and lady of the parlor, are all facts of American peculiarity and great American honor.

Let a man make a tour of the single state of Connecticut, with no other knowledge or observation upon this subject than that which belongs to every intelligent American, he will never forget the impression of dignity, beauty and power which will be made upon his mind. From the heading of a pin to the hammering of granite; from the polishing of the brass button to the beating of the brazen kettle; from the India-rubber suspender to the variegated and beautiful Brussels carpet; in every possible variety and shape and beauty of machinery; upon every flowing river, and upon every little rocky rivulet; from the immense brick or stone edifice of many stories, to the rude shed of pine boards in the woods, upon the margin of the hidden stream; he will see the effects of the American system, honoring, dignifying, prospering and protecting American labor and

American skill. He will feel a pride in his country, I think—a view of her elevation, a confidence in her glory, a perception of her real prosperity, which fallen Mexico, and battered Monterey, would fail to give him. Here, in the flourishing of the arts of peace, is the true criterion of our national glory. To foster this whole system of moral and mental elevation for your country, is the object for which your Institute is established. With a truly American spirit, you acknowledge and honor the moral dignity of peaceful labor. And whenever righteous rewards for human labors are distributed, in the judgment of posterity, it must be said of you, Mr. President, and your associates, that you have deserved well of your country.

This moral dignity of labor is a lesson which America is now teaching to the world. That Europe has been learning important practical lessons from us, during the last half century, cannot be justly doubted. Among the people of all nations the popularity of America has been great, and her influence has been constantly increasing. The corrupt aristocracies and titled governments of the older nations may hate and revile the influence which undermines the foundations of their power; a pensioned tribe of reviewers may combine to misrepresent the whole aspect and operations of our institutions and country; caustic Sidney Smiths may play their anagrams with *Punica fides* and Pennsylvania funds; parliaments may resound with slurs and sneers, and warnings against the fearful anarchy of democracy; bayonets may bristle around the gates of the capitols, and a tinselled soldiery may be hired to murder the multitudes who cry for bread; and yet notwithstanding all this, Europe is learning instructions from America which can neither be rejected nor forgotten. The people are acquiring information of their rights and dignity as men, which no other school than ours on earth can teach them, and with which every thing in their future prosperity and exaltation is to be connected. Undoubtedly this will produce great unquietness under monarchical rule, and will lead to serious revolutions in the orders of society. But the fact abides; and no intelligent man can deny, that the present crisis of the world is the lifting up of the industrious and laboring classes of men to a new position, and bestowing upon them a new relation to mankind. If it be in its commencement an occasion of disturbance, in its process it is a course of peace and order. What has been the conservative element in France amidst its late agitations—an element sufficiently powerful, thus far, to restrain and control the whole—but the influence of the exalted labor and arts of the very classes who, before the first Revolution, were mere laborers in trades, but, in the interval, have

become the mass of property holders in the nation? Oh, could they but have had the training in piety which nurtured the fathers of our own Revolution, and like them, have made their declaration of independence, and their bill of rights, a parasite to grow and flourish upon the word of God, far different would have been their present condition, and their apparent prospects. But this process of emancipation of human labor must undoubtedly go forward to triumph, whatever shall resist, or through whatever agitations it may be obliged to force its way. The hereditary classes of men will never recover a future permanent sway. Human talent, industry, wisdom and skill under the favoring blessing of a Divine Providence, must now go forth to sow and to gather in the harvest of the earth. We are teaching men lessons of political economy which the world has never heard before. And if it be the fact, that all other nations have had their maturity and decline, the analogy from greatness which has been obtained by plunder and force, to greatness which is acquired by the peaceful arts of industry, and the equal dominion of justice, economy and truth can never hold. The myriads of Europe have starved in penury while the adequate means of universal prosperity and supply have been wasted and thrown away. How absurd is the attempt to remedy the resulting evils of a false and ruinous system, while the system itself is left to propagate them still with equal power. I read the other day, in the Life of Sir Fowell Buxton, not only of his great efforts for Africa, but his generous contributions and labors for the unceasingly suffering poor in Spitalfields, where his immense brewery was established. His biographer tells of his skill in the improvements of the brewery, by which he vastly increased its income and his own wealth. But he seems never to have thought that much of the wealth of his brewery came from the poor pennies of these very wretched sufferers around him, or to have imagined what an improvement it would have been, to have stopped forever this tremendous suction from the vitals of the poor, and to have given them in bread, for nourishment, the grain which he there consumed for their destruction. Under what delusions will good men sometimes labor. His course in this, giving with one hand, only a portion of what he grasped with the other, was like the present attitude of his government towards the slave trade, professing the deepest anxiety for the universal freedom of the slave, keeping a fleet upon the coast of Africa, to make the trade as difficult as possible, thus tenfold increasing its sorrows, by the temptation to diminish the size, and to crowd the cargoes, of the craft engaged in it, and then giving an actual premium to slave grown sugar, to make the reward

of their success sufficiently great still to encourage them to undertake the hazard of the traffic. I speak of this but as an illustration of the manifest inconsistencies to which false principles will necessarily bring. I rejoice that amidst all the claims to merit and notice, in your exhibition, there is no improvement proposed, for more effectually distilling the fruits of the earth for poison; or consuming the products of labor for the demoralising and degrading of mankind. I am ready to believe that no medal from your Institute will ever be proposed to encourage the greater power of the still-house or the brewery, to accomplish the poverty and wretchedness of our nation.

The poverty of Europe will never be alleviated but by the exaltation of the standard and estimation of labor, the legitimate consumption of the gathered harvest for the bread of man, and the establishing of the people in their due position as citizens, who are to be respected according to their own acquired rights, and not as subjects who are to be starved or shot at the will of another. Vain is the attempt to feed and satisfy the suffering millions of the poor, while oppressive governments still grind them down, and their doomed destiny and lot is ignorance, degradation and neglect. This great lesson we are now teaching to a waiting world. It is a noble dispensation for our country. They see us, with none of the vines or olives of Italy or France; or the oranges and grapes of Spain or Portugal; or even the rich and glowing verdure, and the teeming harvests of England and lowland Scotland. The magnificence of their time honored architecture we have not attained. Their palaces and equipages cannot be imitated here. And yet there is an intelligence, prosperity, dignity, independence, and self-respect, marking the laboring classes of our population, which lift us far above all envy of the grandeur and glory of European display. They see that we have a people, flourishing and prosperous beyond comparison; but we have no rabble but that which their own degradation has thrown upon our shores. It is the province of America to build, not palaces but men; to exalt, not titled stations, but general humanity; to dignify, not idle repose, but assiduous industry; to elevate, not the few, but the many; and to make herself known, not so much in individuals, as in herself; spreading to the highest possible level, but striving to keep it level still, universal education, prosperity and honor.

The great element of this whole plan of effort and instruction, is the moral, relative dignity of labor; an element which we are to exalt in public estimation in the highest possible degree, and to trans-

mit to our families and to posterity, as the true greatness of their country and the world. We are to look at this enlarging elevation of the working classes of men—a fact which may be considered the main index of our age—not as a difficulty to be limited, but as an attainment in which we greatly rejoice. And if our heraldry is in the hammer, and the axe, and the awl, and the needle, we are to feel it a far higher honor than, if in their place, we could have dragons and helmets, and cross bones and skulls. Our country's greatness is to be the result, not of foreign war, but of domestic peace; not of the plunder of the weak, but of the fair and even principles of a just commerce, a thriving agriculture, and beautiful and industrious art. Let us glory in every thing that indicates this fact, as an index also of our own desire for renown. This great lesson—honor to the working classes, in the proportion of their industry and merit—the world will yet completely learn. And when the great exalting, leveling system of Christianity gains its universal reign, mountains will be brought down, and valleys will be filled; an highway shall be made for human prosperity and peace—for the elevation and dignity, and security of man—over which no oppressor's foot shall pass; the poorest of the sons of Adam shall dwell unmolested and fearless beneath his *own* vine and fig tree; the united families of earth shall all compete, to acquire and encourage the arts of peace; nation shall not rise against nation, and men shall learn war no more. Let this, which is the purpose of your Institute, be the universal purpose of our people, and the greatness of America shall know no limited zenith, and fear no tendency to decline.

CLOSING ADDRESS

Of the 21st Annual Fair of the American Institute, October 20, 1848.

By Gen. JAMES TALLMADGE.

The following was reported as the substance of the Closing Address before the American Institute at Castle Garden: Oct. 20, 1848.

We come, said Gen. T., to celebrate the twenty-first anniversary of the American Institute. It has been our usage on these occasions to discuss the great questions of public policy in the protection of labor and the encouragement of the domestic industry of the country. But on the present occasion, we cannot shut our eyes to the important fact, that much excitement exists, in the public mind, in regard to the pending elections of the chief officers under the general, and most of the several State governments. Hence, we feel it expedient to forbear, and withhold the discussion of domestic measures on this occasion. It will, therefore, be our object to submit a few remarks concerning the American Institute, its purposes, and its progress—and in relation to our country—its prosperity and its condition.

The American Institute was incorporated by the Legislature of the State of New-York, with the declared object to encourage and protect agriculture, commerce, manufactures and the arts, and to cherish the labor, and promote the domestic industry of the country.

This country was settled as colonies—and with the prohibition to pursue commerce, or to manufacture for its own necessary supplies. Our fathers came out of the revolution with the achievement of our Independence. On the establishment of our government, we counted only about 3,000,000; we now have over 20,000,000 of inhabitants. The wilderness has blossomed—our fields produce their abundance for the comfort and luxury of the inhabitants—with a surplus for which it is essential to the prosperity of the country that a market

should be provided. It is a great principle, *that those whose labor furnishes our supplies, must in return be the consumers, and subsist on the productions of the country.* The prosperity of our land can never rest on a sure basis, until a market is provided for the production of agriculture and manufactures. It should be a *home* market. About 83 of every 100 of our population depend for their pursuit and their support on agriculture. They bear our public burdens, pay our taxes, fight our battles—they deserve encouragement. But strange is the truth, that over three-fourths, or from 75 to 80 per cent of the whole revenue, is expended in war, and for its preparations. All the boon agriculture has been enabled to obtain, has been the publication, a few years past, of a report from the Patent Office, embracing a few matters of agriculture.

Our commerce is prosperous beyond comparison. Every sea and ocean in the civilized world is whitened with its sails. The official tables of the *tonnage* of the country show its unequalled augmentation. But truth requires us to state, that the great item of its augmentation is in the Domestic Commerce, upon our canals, rivers, lakes and internal seas. The irrepressible genius of our people cannot there be withheld in their enterprise and business pursuits. The lake craft, small vessels, canal-boats, and steamboats, all enter into the computation of tonnage, and greatly swell the amount. This division of Commerce follows internal improvements, and keeps up with the advance of the country, and the increase of the population. The foreign tonnage, if not stationary, lags behind, and does not keep up with the general prosperity of the country. That great nursery of American seamen, the whale-fishery, with other branches of trade, is falling off, and giving place to the enterprises of other nations. The shipping interest of the country needs encouragement and protection. Agriculture and manufactures are ready to do their part, and furnish their productions for export. The countervailing regulations of other nations mar our carrying trade, impede our commerce, and shut us out from their markets—while our ports are left open for their productions. We must have an equal *market*—a fair *reciprocity* in trade.

The American Institute is the advocate of "*Free Trade*"—not on one side only—but on both sides ; and an equivalent to be given for that which is received. The huzza for *Free Trade* on one side only, is the huzza of besotted ignorance or of corrupted intelligence. Demand and establish *reciprocity* in trade, and my word for it, you

will have nerved the arm of Industry, and secured the prosperity of the Agriculture, Commerce, and Manufactures of America. You will never again know of the steady balance of trade, and the fixed rate of exchange at an average premium of 9 per cent. against the United States. To illustrate—let me ask you to look back a few years, when the “Potato Rot” occasioned a loss to this country of about \$1,000,000; and in the same year the failure of the crops on the continent of Europe disabled it to supply the wants of Great Britain, and she was obliged to relax her restrictions on Trade, and open her ports to the productions of American Agriculture. This short-lived *Reciprocity in trade*, during her necessities for bread, added some \$20,000,000 to the value of our Agricultural produce—altered the balance of trade—gave new employment to the shipping interest, and varied, for the time, the premium against us on exchange, to 4 or 5 per cent. in our favor. Secure reciprocity in trade, the resources of our country, and the enterprise of our people, will maintain such a state of prosperity as the permanent condition of our nation.

The restrictive system, and the countervailing regulations of England in support of her navigation and manufactures; with our regulations to provide warehouses, and receive in deposit, *on credit* for the duties, the fabrics of foreign countries for our domestic consumption, paralyzes our commerce, depresses the home industry, encourages the importation of foreign merchandise, and creates the uniform balances of trade against us. In the language of the Declaration of American Independence, “We hold these truths to be self evident,” that it is bad legislation to permit such regulations in trade as secure to another country a uniform balance in trade against us, and by which a foreign nation can, at pleasure, *and at a premium*, drain away the specie of the country—derange the currency—shake the moneyed institutions—create fluctuations in market—derange business—render unstable all our domestic pursuits—and perhaps bring upon us again that national catastrophe—Repudiation.

It is the boast of England, that such is the wisdom of her commercial regulations, she has a balance in her favor against every country with which she trades. The time was, when in our infancy, with a population of three or four millions, without capital, or manufactures to supply domestic wants, we were obliged to submit to unequal terms in trade. The time is, when, with a population of upward of 20,000,000—with capital adequate to emergencies—man-

manufactures established—with a navy, and an army, both of which, in turn, have fought themselves into reputation—we have a right to demand reciprocity, and no longer to submit to unequal terms of trade. England knows America is her best customer ; America feels that England is her best friend. They now stand, side by side, conspicuous in the civilized world, for Arts and Sciences—Government of Laws—Civil Liberty, and manly enterprise. This condition can only be rendered permanent by reciprocity—by equality in intercourse.

Our Manufactures are established. The wastes and the wilderness of the West are giving place to internal improvements. Manufactures are following in their footsteps, and spreading over the land. They already furnish abundant supplies for domestic consumption and foreign commerce. It is pleasing to know they are, in addition, already useful to the measures of Government. They have, and are now furnishing domestic goods for assorted cargoes, and which the enterprising commerce of New-York is shipping to the South American ports, and to the Western Pacific—the proceeds to be deposited there, to answer in part the drafts, of Government for its exigencies in the Mexican war, and the California adventures. In the boastings for success in the measures of *Finance*, it would have been generous to have eked out some expression of commendation to the skill and punctuality of commercial industry. But, perhaps, the *commissions* allowed have satisfied these claims. All these proceedings in support of the Mexican war and the acquirement of new territory, are happily in accordance with the *principles* of the Sub-Treasury, and stand justified by that Constitution which in aid of Commerce cannot take a snag out of the river, nor remove a dangerous reef of rocks from the inner harbor, or lower a sand-bar at the entrance of the bay.

The arts and sciences are cherished in our land. Our varied literary institutions are successfully performing their respective duties in the dissemination of education. France, in her orgies of liberty, maintained that *crime* followed after intelligence, and in demonstration, maps were prepared, shaded from light to entire darkness, and marking the localities of crimes in the districts of light and intelligence. Perhaps she is now in the enjoyment of the natural fruits of her theory. We are ready to say—

“If ignorance is bliss, 'tis folly to be wise.”

The people of America maintain the opposite doctrine, and place many of their blessings to the score of the widely disseminated intelligence in our land.

“’Tis Education forms the common mind;
Just as the twig is bent the tree’s inclined.”

It may be pleasing to this audience to be informed that *free tickets* have been distributed by the American Institute, to the Charity Schools of this city, including the inmates of the Deaf and Dumb Asylum, and the Alms House. The children from these schools have visited this Fair, and witnessed the spectacle now before you. The delight of the little urchins, on the occasion, you can better imagine than I can describe.

The wide-spread intelligence in our land is curiously and abundantly shown in the numerous and multiplied new inventions, and improvements in established machinery, more conveniently to accomplish some mechanic result. The Committee of Examination speak favorably of many of the inventions and improvements now on exhibition.

Among the number of improvements, Gen. T. enumerated the following as having special merit and worthy of notice: Flour mills, not much larger than the crown of a man’s hat, which will grind 60 bushels of wheat per day, into first rate flour; they can be purchased for \$150, complete, with bolting apparatus. There were corn-mills on exhibition, which do their work admirably, with nearly the same expedition, and costing even less. There were eight important machines for the manufacture of cotton and woolen cloths, which may be said to advance such machinery in the series by which cloth is now made, to enable the manufacturer to reduce the cost several mills per yard: should a corresponding number of improvements annually appear at our fairs for the next ten years, a yard of good unbleached shirting will be made for one cent per yard. Another machine is for the manufacture of weavers’ harness, reducing the price of that necessary article to weavers. Another, a throstle spinner, for cop spinning, by Mr. W. B. Leonard of the Matteawan Company; also, by the same, a superb drawing head frame, and by a gentleman of Paterson, New Jersey, a very convenient improvement in the Railroad drawing: a new and important improvement in the card sticking machine. Among the machinery exhibited there are file cutting machines, bullet making machines, stave dressing machines screw bolt making, steam fire engines with pump for local purposes;

steam hammer, lathes, planing machines, Judson & Pardee's dressing machine, iron drilling, brad making, wagon spoke machine, tooth cutting machines, mortising and boring machines, valuable improvement in ship pumps, railroad wheels, double acting bellows, new mode of setting steam boilers, lifting pump for mining purposes, self-weighing scales, Brooklyn cut glass, cabinet furniture, two improvements in the steering of vessels, some in telegraphic communications, and in others too numerous to detail. All are before you, and await your examination. The belief in the advance of mechanic skill and intelligence is found to fall short each year of the reality, as exemplified in the articles on exhibition. The genius of the mechanic's skill is developed by competition; and the humble education of his early life, at our common schools, enables him to produce fruits of great individual value and public utility. America is already in advance in her proportion of the new inventions and improvements of labor-saving machinery. The plough, the anvil and the loom—those unerring witnesses of the state and condition of a country—she has, with her improvements, ready to exhibit in competition with the civilized world. Many evidences will be found throughout this Fair of the high state and advanced condition of the arts and sciences, of their adaptation in the useful pursuits of life. Telescopes, chronometers, and other instruments of science are among the articles on exhibition.

It is curious, and worthy of remark, that the first railroad built in Germany was made for the Government, and by *female* labor, at the wages of eight cents a day. The average wages of the Continent of Europe is from twelve to sixteen cents a day, the laborer providing his own subsistence. In England the wages are a trifle higher. Can it be possible, that it is expedient, wise, or just, to permit the productions of such labor to be imported for consumption in this country, while the countries from which they come are shut against the productions of the United States? It strikes a blow at the carrying trade and navigation of our country, in thus stopping our exports while receiving theirs, and thereby cherishing the navigation of such other countries at the expense of our own. It depresses the laborers of this country; it reduces them to a degraded competition with the mendicant subjects of the Monarchies of Europe. They can never hold rank or station in society—acquire the rational comforts of life—receive education or the intelligence necessary to become members of our free country—or safely to exercise the right of suffrage in our institutions. Gen. T. said, "Will you look around on the articles on exhibition, and pronounce which of you are wil-

ling to see the producers of such articles brought to the level and condition of such a competition."

Such a rate of wages, and such a scale of depression, are required and fitted only to monarchies founded on a system degrading to their subjects, trained to become the mere tools of despotism. The present age has witnessed for a series of years the wars of Europe. History has recorded, as mementoes to succeeding generations, the *finale* of those mighty wars.—The great battle of Borodino, where the Frenchman, fighting for the *spoils* of liberty, and the Cossack, contending for the Empire of his Czar, fell in conflict, and were alike shrouded in the snows—their bodies remaining a winter feast for the wolves of Russia!—So the yet more mighty conflict of congregated Europe in arms at Waterloo; the mendicant instruments, the war horses, and the *heroes* that led them, and which there fell;—their bones were afterwards alike collected from the battle field, and, with the aid of labor-saving machinery, broken up, barrelled, and shipped as manure for English agriculture! With such great examples for moral reflections before us, how consoling and ennobling is the thought, that the labor of our country is intelligent and respectable; and as a reward for its industry, is in the enjoyment of equal rank in the community, and in the possession of all the rational comforts of private life? Shall it not be sustained in its elevated condition, and be trained in the peaceful pursuits of civilized life?

A National Convention of Fruit-Growers has been formed and held in this City, under the auspices of the American Institute, as a branch of the Agricultural department, during the present Fair. Twelve states were ably represented—bringing specimens of fruits, from their several localities, presenting as a whole, in contrast and in variety, an exhibition of the choicest fruits, and with an interest and a display, rarely equalled or surpassed. It had been found that newly imported fruits were old varieties, and sometimes bore new and fictitious names, which had crept into our catalogues. A material object of the Convention was to correct the Catalogue of Fruits—expunge the present numerous names for the same variety—and to determine and select the names of the varieties deemed useful for individual cultivation. As an example—the list of nearly 200 varieties of the Grape was reduced to 15 or 20; Apples, Pears, Plums, &c., underwent a somewhat like proportionate reduction.

Gen. TALLMADGE closed by adverting to a number of articles on exhibition, spread upon the table before him—drawing from their

contemplation happy auguries of the capacity and skill of our country, and her artisans, for future and complete success; and stating, that the quality of the articles on exhibition had been greatly improved—the number of visitors increased, and the amount of receipts at the entrance, greater than at any former Fair—upwards of 24,000 articles had been put on exhibition.

He then proceeded to state that the following premiums had been recommended by the reports of the several committees of examination, viz:

- 55 Gold Medals.
- 298 Silver Medals.
- 61 Silver Cups.
- 450 Diplomas.
- 136 Volumes of Agricultural Works.
- \$120½ Cash Premiums to Apprentices and Minors.
- \$25 Awarded to Team of Oxen.
- \$25 Knapp Premium.
- \$15 Van Schaick Premium, and
- 2 Bronze Medals.

He then, as President, awarded and confirmed the judgment of the Institute accordingly. The fair was thereupon closed.

FARMERS' CLUB.

REPORTS OF MEETINGS.

March 21, 1848.

Judge R. S. LIVINGSTON, in the Chair. HENRY MEIGS, Secretary.

J. S. Skinner, editor of the Farmers' Library, read an extract from a letter from the Hon. M. Neill of Maryland, on the method of raising potatoes free from disease. This is (said Mr. S.) a well worn topic, but I have always been anxious in my researches in agriculture, to bring forward such facts as are undoubted and useful to farmers, with regard to the potato crop in question. A gentleman of Frederick county, in Maryland, planted some potatoes which he had obtained from Mr. Neill, who now states from that gentleman the mode of culture pursued. That was, to manure and prepare the soil well, then plant the potatoes, about three or four inches deep, in drills about eighteen inches apart, and one foot in the drills, and then immediately covering the soil with straw to the thickness of three or four inches. This covering of straw prevented the growth of weeds and the necessity of cultivation. The result was an excellent crop of sound potatoes, so far as they were covered by the straw, but those which happened to be left uncovered with straw, were affected with the potato rot! Mr. S. observed that the last words induced him to read the extract to the club, and Mr. Naill considered that exception with uncovered potatoes, as well worthy of consideration. Such particulars as this are far more important to farmers than general speculations.

Mr. Skinner then took up the subject of drainage, and occupied some time in giving extracts from the most valuable writers, especially from Von Thaer, and Stephens. The most important of whose
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lessons on this subject, are given in the Farmers' Library, to which or to the original works, it is necessary to refer those who desire full information on this point.

I wish to say something in reply to Mr. Wakeman's remarks, at the last club relative to the appeal to Congress for aid to the cause of Agriculture. The resolution to call Congress to the adoption of General Washington's plan of a department for agriculture is a stereotyped resolution! Of what avail is that? I wish to stimulate the farmers to take this their own cause into their own hands, and I pointed out the outlay for war as being 80 per cent of our expenses, and this drawn from their pockets!

Mr. Wakeman.—We have for several years urged in numerous appeals to the farmers that they should take this matter up, insist on it, nor stop until they were so represented by farmers of their own choosing, that the great cause of Agriculture should take the lead as it always ought to do.

Mr. Skinner.—Sir, I have in all this matter, as little personal interest as any man. Few men suppose that war costs 80 per cent, the greater number think that two or five per cent is high enough. Mr. S. read a circular prepared by him to be laid before Congress, and he laid copies of it on the table for signatures.

Mr. Skinner proceeded to observe. Something like objection to books on agriculture has been made, but I say that the agricultural papers, books of our country have proved eminently practical, and therefore highly valuable.

Mr. Skinner then read further extracts from the Farmers' Library on the subject of drainage, also from the Journal of Agriculture. He mentioned the judicious draining by E. F. Hall of Delaware, who has made on his farm, twenty thousand pounds of pork, and four thousand pounds of butter in a season. And Mr. Hall's blind drains were made at a cost of only twelve and a half cents a rod.

Mr. Skinner said that the drainage alone at Lindenwold, by Mr. Van Buren, was judiciously and profitably executed. So were Lord Stanley's in England.

Charles Henry Hall.—I came in late to-day, not knowing what was under discussion, but I heard a part of the remarks of Mr. Skinner, and if he undertakes to vindicate his agricultural labors, I assure

him and the club, that it is entirely unnecessary in my opinion. He was for twenty years at the head of that most valuable agricultural work, the American Farmer, respecting which I have heard Sir John Sinclair say, "that it contains more practical information than any other agricultural work." Mr. Hall claimed for our fathers, merits as agriculturists, in many respects, superior to those whom they left behind them in England. He spoke of the thorough knowledge of soiling exhibited in the very fine farming of Josiah Quincy of Massachusetts. Sir, we are not behind England in the art of agriculture. Our fathers, ay, sir, our puritan fathers made drains to improve their farms in New-England, before it was ever done in Old England. Nevertheless, it would be ridiculous to drain lands near dry lands, to be bought, as in parts of Long Island, for three dollars an acre; that beautiful island which by the application of true knowledge, will be made the garden of America. It has more clear days, a more temperate climate, and many other greater advantages from its position than any other spot of equal extent.

On draining, let me mention the great farm of Cook, in England; when he began, his land was worse than the despised lands of portions of Long Island, but he made drains of all sorts, but no more or better than had been made here by our forefathers long before he was born. But he made a great farm of it. Many of the laborers on his farm had the ability to pay for their bottle of wine a day, and Cook wished that every man on his farm could afford it. Jethro Tull, whose book on husbandry is valued, entertained some peculiar theories of his own; he taught that by a thorough and frequent pulverising of soil, we might dispense with manures. Some suppose that Mr. Tull was a common farmer. Sir, Jethro was a man of fortune, a gentleman who travelled extensively, surveyed the agriculture of other countries and then devoted himself to it at home in England. In 1740, our Elliot was teaching and practicing the best rules in agriculture, including draining of all kinds. You see, Mr. Chairman, that I have no idea of surrendering any of our rights, nor Mr. Skinner, will I consent to give you up. Our Timothy Pickering wrote a valuable essay on draining, then comes Judge Peters, Jefferson, Taylor of Virginia, Madison, whose papers on agriculture are most valuable. On the subject of draining, we can look back to our forefathers who have used it for two hundred years.

Mr. Skinner.—I see Dr. Underhill is now here, and I repeat in his presence, that the acres of land in this State which would be benefited by draining, would cover one-half of the State of Rhode Island.

The club passed a resolution thanking the Hon. Nathan Burchard for his exertions in behalf of the proposed agricultural college.

Charles Henry Hall.—I was at Albany last week and I proposed that instead of an agricultural college and farm here, there should be four. One for each grand division of our State.

Mr. Wakeman.—Mr. Skinner now says appeal to Congress for aid to your agriculture! why, sir, must I repeat it, we have done so for four years past and we have written and printed and distributed appeals to Congress on this matter in quantity equal to volumes. We have called up the spirit of Washington on these occasions. Sir, what we have done, has its effect to some degree, and will ultimately prevail. On this subject of draining I must say, that we cannot except in very peculiar localities, go to the expense of draining after the modes recommended by Von Thaer, Stephens or any other foreign writers. Nor, (such is the difference of climate, of circumstances,) would these modes be at all suitable to us, ask farmers? Mr. Skinner has said, that our rule not to decide agricultural questions in this club, but to collect facts for the people to decide, was not observed when we lately passed an unanimous vote of thanks to the Hon. Mr. Burchard. Pray, sir, let me ask, how is a vote of thanks to any man, to be considered as deciding a disputed point in the art of agriculture? Mr. Skinner wants to know whether there were six—yes, sir, or even three farmers present at the adoption of that resolution.

Yes, sir, four-fifths of all the members, who attend our clubs, are gardeners, farmers, or citizens having a direct interest in agriculture, and many of them of far greater practical knowledge of farming than Mr. Skinner supposes. The chairman Mr. Van Winkle of Bergen has been a farmer and an excellent one, from youth to age. I counted here to day over sixty persons in attendance and I repeat it, four-fifths of them are gardeners, farmers or deeply concerned in agriculture probably about the same number when the resolution referred to passed.

Judge Van Wyck moved an adjournment for one week to pursue the subject, and distribute seeds and grafts.

Mr. Wakeman seconds that motion. Carried unanimously.

Mr. Meigs presented an Orange Lemon seldom seen here, but frequent in South America, and in the West Indies. It was tasted by members.

Subjects for next meeting, same continued, and by Mr. Wakeman ;
 "How far does European Agriculture relate to us ?"

Adjourned till Tuesday, March 28th, at noon.

28 March, 1848.

JUDGE R. S. LIVINGSTON, in the Chair. HENRY MEIGS, Secretary.

Mr. Meigs read a communication from Dr. Henry H. Cox, assistant of Dr. Reese, of New-York, on the agriculture of the beautiful island of Bermuda, which Dr. Bartlett, the editor of the *Albion*, had called the *Garden of the Atlantic*. Its lovely climate capable of a great variety of vegetable productions, common both to the tropics and the temperate zones, and within 3 or 4 days sail by a steamer.

Mr. Wakeman presented a communication from Mr. Ancrum, upon the subject of the history of sheep, particularly the Merino of Spain. This communication was read in part and then referred for publication.

J. S. Skinner.—The following communication from this gentleman was read, viz:

Philadelphia, March 27, 1848.

To the Chairman of the New-York Farmers' Club.

A sudden call takes me to Baltimore, else it would have been as agreeable as edifying to hear the views of the mover, and others, on the question (rather vague and expanded as it seems to me) "how far European works on agriculture may be applied in this country." To this, the natural answer would seem to be: as far as they are applicable!—nor is it easy to see how the mover himself can move a peg farther, until he defines his position,—until he specifies a particular work,—or work on some particular subject, and thus presents the inquirer something to grapple. Otherwise does it not seem much like asking a man: "Sir,—what do you think of things in

general?" If he mean works on agricultural chemistry,—on botany,—on the principles of vegetation,—on the breeds of cattle, sheep and horses,—on the constituent parts of all the fertilizers, and of grains, grasses and plants,—are they not the same in one country as in another? But if he means some particular book, to which one can recur, that recommends particular crops, not suited to our market, or to which our climate is ill-adapted, then it should have so appeared in the question given out; and then there would be something tangible to examine and discuss. If, in short, the character of New-York Farmers is involved in and responsible for the questions and proceedings which appear in their name, then most respectfully, in their behalf as practical men, I would submit, whether these questions should not be propounded after due deliberation, and the proceedings had upon them, be reviewed, so far, like those of other bodies, as to be pronounced substantially accurate, and reasonably full? Would it not be well to appoint a Committee, to consist of at least two-thirds, practical farmers, to decide on and publish a series of questions for the season,—for each of which, particular days should be assigned, and all published at once, and then let the club confine itself to the specific question, and finish that before taking up any other?

For instance, what has become of the "stock and particularly lambs," assigned for a former meeting, and at the last turned loose, it seems, at this critical season of the year,—between "hay and grass,"—as the farmers call it? "The care of the stock and particularly lambs?"—well, was it meant by the comprehensive term stock, horses and stock of all kinds, or oxen, or dairy stock?—grazing cattle in the mountains, or fat cattle in the meadows?—or calves at the cow's foot?—or what?

As for the "care of lambs,"—the first care, one would think, would be to keep them clear of wolves and dogs,—then from thieves, in some States, "that break through and steal." "The care of stock and particularly lambs,"—does it mean winter or summer,—in the house or in the field? With the utmost deference, I would ask leave to suggest, that questions should take a more practical and specific shape, to be understood and considered by plain, practical farmers.

We shall see what is said in the "official report" of "European works." That there may be errors in the best of them is only to say what everybody knows. To err is human. The best wheat is not free from chaff, but science,—and European science at that,—

has demonstrated that even chaff has its value in combination with flax-seed, and other substances, as food for stock. Books sometimes recommend modes of improvement, as in draining, beyond the means of American farmers generally, but that proves their want of capital, and not the ineligibilities of the work, if they could accomplish it. Look across the Hudson at the Jersey meadows,—what a mine of wealth if their owners had the means to drain and embank them as in Holland,—would it be reasonable to reject a valuable book because it contained some things not applicable,—merely because it was European? About as reasonable as it would be to refuse to pick up a walnut or a chestnut because they are covered with useless hulls and prickly burrs! Instead of discouraging the introduction of works which have done so much for European Agriculture, and for the renown of their authors, let us rather stimulate our young men to accumulate and read all that comes in their way on their profession,—to exercise their own judgment, and hold on upon that which is good.

“Always anxious to learn, for which the longest life is too short.”

Your obedient servant,

J. S. SKINNER.

Mr. Meigs.—I have read this communication from Mr. Skinner with pleasure, for it is of that character which the club was constituted to invite, being a free and unreserved criticism on some of the doings and opinions of the club. We have always for years asked for such unreserved expressions of opinion as the only sure means of arriving at just conclusions. We ask not for flat but polite contradiction. Sir, we are not the first to give publicity to great truths in the cause of agriculture! We are proud rather of our disposition and capacity to read and understand the instructions of great and learned men who have lead the way. Many a brilliant mind has felt, and many an eloquent tongue has taught the same things, which we seek to enforce. The greatest men that the world ever saw for the last three or four thousand years have with one accord harmonised upon the glorious duties and powers of our race in relation to our common mother earth. Some twenty years ago, I gave gladly ten shillings for this little pocket volume, written by one that the members present hardly ever heard of in a town, whose existence is recently made known—and it is the original Farmers' Library by Lathrop, of Rochester. Let me read some passages which neither we nor our ancestors could better write than Lathrop has!

"Two thousand years ago, it was remarked by an ancient philosopher, that although granting honorable distinctions to those who should best cultivate their lands, might tend to the encouragement of agriculture; the Grecian republic was so occupied in distributing favors to idle and powerful men, it could not bestow a thought on useful and obscure citizens. The American republic is subject to the same opprobrium in the infancy of it; neither will it be removed, if the occupation of agriculture shall be considered as a mere menial exercise, unworthy of the efforts of intellectual capacity!"

"Of the utility and improvement of studying agriculture as a science.

"Chemistry most important to agriculture which derives from that science, improvements which cannot be obtained from any other source.

"The maxims and principles which relate to agriculture should be correctly recorded and studied as other sciences. The innumerable volumes which have been written upon the subject among the wisest and most learned nations, may convince us that it has been so considered by them, and not regarded as matters easily understood.

"The discoveries in the cultivation of the earth are not confined to the time and country in which they are made, but may be considered as extending to future ages and intended to meliorate the condition of the whole human race, and providing subsistence for generations yet unborn."

Mr. Skinner has said that for more than twenty years, if his postage, chiefly agricultural correspondence, had been paid by him, instead of being free, he being attached to the post-office, that postage would have been three thousand dollars per annum. This at a shilling a letter would give twenty-four thousand letters a year, or about eighty a day, excepting Sundays.

That implies a vast amount of correspondence indeed, nor can it be doubted that he has thereby greatly contributed to the diffusion of that important science among men.

Mr. Wakeman observed that the success of the original plan of this Club is abundantly manifest, for its proceedings have been extensively noticed by the press and elsewhere. It was the collecting of practical and theoretical lovers of agriculture, who in short speech-

es of five or ten minutes, speak of facts, of opinions freely, but never pretending to decide questions! for is it not obvious that those who should attend one meeting, could not be supposed to know every thing bearing on the question under discussion, and other members of another meeting might differ from them very materially. The most able writers are by no means agreed—and again, the peculiar cases of soil, climate, culture, &c., may cause great difference in results from any one system of agriculture. It is true, that so far as science has been applied, there are some settled points as to the peculiar adaptation of soil, &c., to certain crops, chemically considered. Mr. Skinner has mistaken our object in this. We are to collect facts for the public to try and decide. Mr. Wakeman called for the reading of the first rules adopted by the Club, to show this. The rules were then read.

He once advised our holding of Fairs once in three years! That course would have destroyed the whole system. The lapse of time is too great, and moreover, here the prodigious energies of mind and body produce annually abundant novelties to attract the admiration of a mighty public. He doubts the popularity of our proposed Agricultural College and experimental farm. We do not entertain a shadow of doubt, for we have found among the thousands who have been asked to petition for it, not one in twenty to decline it. We beg for good advice from the wisest men; but we wish those counsellors to be well acquainted with our regulations, and the reason for their adoption.

William Serrell presented a communication, in which he repeats the advice to blind horses in cases of fire, as has long been practiced and particularly in London, as to horses employed to drag engines to conflagrations. That it is believed that the eye of a horse receives light from a conflagration with eight times greater intensity than the eye of a man.

Dr. Underhill of Croton Point.—Mr. Skinner has appealed to me and asked, whether the undrained lands of the state of New-York, do not amount to half the state of Rhode Island. In reply, I say that I believe that Mr. Skinner spoke within bounds. The swamps of New-York are equal in extent to the whole state of Rhode Island. But, nevertheless, I think that seven-eighths of the old States of the union, do not need the system of draining as practiced in England and some parts of Europe. Our soil is far hotter than theirs. No man can admire more than I do the intelligence of the English writers,

but there is no comparison between the condition of England and ours, in reference to moisture. Still, I should rejoice if our farmers would take the trouble to raise the masses of mud and muck from their ponds and swamps to their hill tops, which would then be fertilized and blossom like the rose. Great Britain is saturated with moisture. Plants and trees cannot penetrate so deeply into the soil as with us, for the heat of the sun cannot penetrate so deeply as with us. An orchard planted in England in the depth we plant ours would die in two years, in all probability. The difference of our climate is due to the great prevalence of the westerly winds which come to us over our great continent dry, while the winds of the Atlantic convey abundant wet to Britain, and the shores of Europe, and that too is increased by the melting of the floating mass of ice annually coming down from the northern seas. I do not wish to make a sweeping censure on English agricultural books, but the applicability of much of their instruction is more than doubtful, and by following their lessons great injury is produced to the farmers, except where great discrimination and sound judgment are exercised in the application of some of their rules, and, indeed, without careful discrimination, their teaching is worse than none. As to their general rules for breeding and care of stock, we know them to be excellent and apt to our circumstances, and obedience to them is a way to wealth. The theory of the upward action of manures is as little applicable probably to England as some of their rules are to us, and that difference is due to the great power of our summer heat when compared with the cold temperature of an English summer. And on many great points in agricultural matters, men of talents may differ, but there is no difference in opinion that agricultural science requires ripening. For some twenty years or more past, Europe has had agricultural colleges, schools, experimental farms, as well as numerous writings, by means of which a great revolution has been effected in favor of agriculture, so marked by the character and amount per acre, that the cause is beyond all possible question. The increase is owing alone to increasing knowledge. The intellectual fire has been infused, and, as in other arts and sciences, it burns brightly. May we not have one agricultural college whose light shall be diffused throughout our country? Let us begin and let the science of agriculture be engrafted also upon every school in the land. Let it be what it ought to be, capable of attracting to its studies and its practice the sons of our most talented and wealthy citizens. Why not? are not other professions over done? Some of the rich will find where all wealth comes from—the mines of agriculture—the foundations of all prosperity in every other pursuit of man

Mr. Williamson.—I think with Mr. Skinner that the club is wrong in not taking up the subjects proposed for discussion.

Dr. Underhill.—I think that the subject advertised for discussion should be taken up, to the exclusion of miscellaneous matter. There are differences of opinion as to the agricultural college and the teaching of agriculture in common schools. I want both! Let not motives be questioned. As to the difference of climate, let me observe, that if we planted here our plants, shrubbery and trees as they do in England, our summers and winters would either burn or freeze them to death. It is fatal to follow implicitly, the English rules in our climate. Disgust has been produced in the minds of thousands of our farmers by the failure which they have sustained here in attempting to follow some of the English rules of agriculture.

Mr. Wakeman.—The remarks of Mr. Williamson on the necessity and propriety of excluding miscellaneous communications in favor of the stated subject of discussion are apparently just, but in practice how is it? Those who might most ably speak on the subject are frequently not at the club at the time. We publish the question in hopes to bring out those best qualified to enlighten us, but they do not always come, and again when the miscellaneous collections are presented, the club can, if it pleases, at once lay them on the table, in order to take up the published question, but the club often finds such communications more immediately interesting, and they do defer therefore, the regular question. And we do not want long set lectures. We wish for a conversation, a brief exchange of ideas. This course is desultory, but it has hitherto been an acceptable one. As to the library of the institute, we wish it was larger, but as it is, it contains several thousands volumes of as practical and useful books as are to be found in almost any public library. And it is open to all, gratis, from morning until night. Good scholars think it a valuable library. We invite all the farmers to come and examine it.

The Chairman. The subject proposed for the day ought always to be taken up, and whenever I have occupied this chair, I have always called the attention of the members of the club to it, after the regular hours for miscellaneous matter has expired.

Dr. Underhill.—The miscellaneous subjects frequently prove so interesting that perhaps we lose sight of the regular one occasionally.

General Chandler.—I am by no means surprised that any gentleman interested in the publication of agricultural periodicals, should find fault with the proceedings of the Farmer's Club. The operations of the club are designed to benefit the public, without charge, and may very justly, in the estimation of some be deemed an unwarrantable interference with individual profits. There is more danger in attempting to do service for nothing than is generally supposed. The secretary of this meeting and myself were for two weeks, under great apprehension of being indicted, for very innocently investigating one of the most cruel shipwrecks that have occurred on this coast for the last century. I have no doubt he will bear testimony to the truth of my remarks.

Mr. James Henry presented to the institute his family and school monitor and explained its object.

Mr. Manice of Long Island. We are told that the Osage Orange forms a good hedge. Not so on Long Island, I have tried it for seven years and I find that it dies out in spots. It will not do, and I hope our people may not be so misled as to try to make hedges of it. I have tried also the New Castle Thorn, but that is now attacked by some insect which threatens to destroy its utility for hedges.

Subjects for the next meeting, suitable to the season, pruning, grafting and budding. Adopted.

Mr. Armstrong presented a specimen of the gutta percha membrane, adapted to grafting, the edges of the membrane are readily united, after being wrapt around a graft, by means of a case knife heated over a lamp, being drawn slightly over the meeting edges. The weather is then entirely excluded.

Jas. P. Allaire and Miss Johnson presented to the club, cuttings of the Sugar Grape from the county of Monmouth in New-Jersey, supposed to be a native Grape, long known there, growing usually on the banks of streams, an abundant bearer. Berries oblong, pale green or white, deemed delicious. The cuttings were distributed.

Dr. Underhill.—I will present to the club at the next meeting, grafts of some of my best apples.

The club adjourned to Tuesday next.

April 11, 1848.

Judge R. S. LIVINGSTON, in the chair. HENRY MEIGS, Secretary

Mr. Wakeman presented a letter from the proprietor of the Farmer and Mechanic, which contained an article on Metallic Fire Proof Paint, from Mr. Blake, of the town of Akron in Ohio.

Mr Wakeman also presented a letter, from the Hon. Edmund Burke, Commissioner of Patents, which was read. The Commissioner asks for information as to all Agricultural Societies, their place, presidents and secretaries, desiring to obtain from them quarterly reports as to the condition, extent, &c., of agricultural products.

Mr. Meigs.—The request must be gladly complied with. How pleasing to see Congress order one hundred and fifty thousand copies of the Commissioner's annual report to be printed! So much for the benefit of farmers. Better than so much for gunpowder.

Mr. Wakeman read a letter from Joseph Cowdin, Esq., U. S. Consul at Glasgow, acknowledging the receipt of the information that he was elected corresponding member.

Mr. Wakeman read an extract from a member of Congress, stating that the report made by John Clowes of the Am. Institute, on the subject of the explosion of steam boilers, &c., was much liked for its scientific, and practical character.

REVUE SCIENTIFIQUE, &c., PARIS, NOV. 1847.

Mr. Meigs.—I translate some extracts from a letter written by a physician in China to a druggist, his father in Paris. He travelled 4 or 500 leagues in China and paid particular attention to their apothecary shops. "The aspects of them are every where the same as to their disposition and mode of arrangement varying only in their relative magnitude and importance, so that when you have seen one you have seen the whole. This remark also applies to almost everything in this singular country. The front of the Chinese apothecary shop (which is unusually extensive) is ornamented with colossal signs placed perpendicularly and fronting the two extremities of the street so that they strike the eye in all positions nearly. China writing is read, you know, from top to bottom. The charac-

ters are beautifully wrought, carved in relief and carefully gilded. In the store are long counters, and chairs for customers to repose in. The walls are covered with professional sentences, much resembling in style the quack advertisements on the walls of our large cities in France. Infallible remedies for syphilis (*shanz tinz*) for rheumatism (*fong shap*). A paste made of an ass's skin.

"Alas my dear father, is it not fine to come here to the end of the world and find Charlatanism quackery triumphantly established here? And it is far more shameless here than in France—for here the law leaves the credulous public to take care of itself, never interfering until the mischief is done. Some of the sentences written on the walls of the apothecaries' shops are quite original. Here is one literally translated for me, by my friend Dr. Pittee of Macao—it certainly lacks neither sense nor appropriateness. 'A druggist ought to have two eyes when he buys drugs, a physician who administers them needs but one eye—but the patient who takes them ought to be blind.'

"In a shop in Canton, I noticed the following, taken at random, from those on the walls. 'Stone is eternal, the tree lives many centuries, by study of stones and trees I can give to a man a life as long as theirs.'

"They make and sell enormous quantities of pills, of which they have 500 different kinds.

"They take a stag, hang him up until he dies a slow death, they take off the skin, then pound the carcass in immense mortars, afterwards they put in absorbing powders, and form the whole mass into pills. They do not use syrop or alcohol. They all read the great volumes constituting an Encyclopedia of medical knowledge and China Natural History, entitled *Pan-tsao-can-z-mon*, or the Chinese Herbal, which ought to be studied in France, with the greatest care. There are 52 volumes.

"They use excessive care in curing plants, so that we were astonished to see the buds and flowers still having their natural colors, the leaves entire and still green. One of their writers has said (*Sing-Tse-Maio*), that the ancient physicians took care to cultivate, gather, dry and prepare the vegetable drugs, and healed nine patients out of ten, while in modern times, physicians were unable to cure more than half their patients.

"It seems to me, says the French doctor, that the science of medicine in China, is now very much as it was in Europe 300 years ago.

"Chinese apothecaries form a very influential corporation in China, and generally enjoy a great consideration. The quarter occupied by those of Canton, is almost exclusively held by them. The English call their quarter Physic-street. A prodigious activity prevails in this Physic-street. Ginseng, ginseng is the universal panacea. The costume of the apothecaries is the same as that of the rich merchants. A long robe descending to the heels, a fine straw conical hat covered with crapes of horse hair in summer, and with black velvet in winter. They affect an imperturable gravity."

Mr. Wakeman.—Roswell L. Colt of Paterson, has urged on the United States government the grant of a township of public lands for the purpose of agricultural instruction.

Mr. Fowler, the distinguished Phrenologist, presented grafts of the Locy apple (named from Mr. Locy) a very fine fruit; also of Virgaliu pear, of Buffum pears, and also from various choice imported pears.

Dr. Underhill, of Croton Point, presented about twelve hundred grafts from his highly cultivated Greenings, Vanderveers, Newtown and Fall pippins, and also cuttings from his grape vines.

Mr. Meigs.—A thin membrane formed of Gutta Percha, is recommended for wrapping the grafts, the edges are readily seared with a hot case knife, and thus perfectly unite and exclude all moisture.

J. S. Skinner, editor of the Farmer's Library, stated that he observed several errors in the official report of the last Farmer's Club, which as they related to some of his remarks, seemed to require correction. These errors were no doubt unintentional, but he deemed it proper to place himself correctly before the public, and also in behalf of other persons who are implicated in these misstatements!

He said that in the experiment of Senator Neill, of Maryland, the word *happened* to be uncovered, was not correct, that this was a part of the very experiment, and that, therefore, it did not happen, but was designed. That the draining ascribed by the report to Mr. Hall, of Delaware ought to have been Major Jones, a farmer of great

zeal and good judgment, who had said publicly that draining had been practiced with success in Delaware, on the plans laid down in Mr. Skinner's Farmers' Library. That the blind drains spoken of as costing twelve and a half cents a rod, were stated by Mr. Hall, of Lebanon, who says "give me four good horses with proper tools and men and I can dig any quantity of drains two and a half feet deep for twelve and a half cents a rod. "That when the chairman asked if he meant blind drains, he here replied that he supposed he did, for otherwise they would be merely so many ditches. Mr. Skinner said that he had not stated that the drains would be made for twelve and a half cents a rod.

He explained the estimate of his postage expense, to have been caused by the transmission of not only letters of several pieces, of 12½ cents each, but of bags of seeds, of which his clerks sometimes sent off 100 in a day. Mr. Skinner presented a letter from J. R. Stafford of Cleveland, communicating an analysis of Indian corn, by Mr. Payne, whom Professor Henry in a letter to Mr. Stafford says, he may be, as he thinks, relied on. Professor Henry said, it is contemplated that a perfect analysis will be made on the application of the Commissioner of Patents, and perhaps at the expense of the Smithsonian Institution.

PROFESSOR HENRY'S ANALYSIS.

Starch,	28.40
Nitrogenous matter,	4.80
Fatty matter, oil,	0.20
Cellular tissue,	20.00
Dextrine,	2.00
Various salts,	7.20
Total,	<u>98.20</u>

Mr. Skinner read an extract of a letter from Mr. Sumner of South Carolina, stating that a brother who has been a year and a half a pupil of Liebeg, is now engaged in analyzing corn, cotton plant, and Indian pea, from the ashes, stalks and grain of these products, sent to him from this country. Mr. Colt of Paterson offered one hundred dollars to the Institute for the analysis of corn.

Mr. Wakeman.—Mr. Colt offered \$100 for that purpose, I saw Prof. Chilton about it, no definite arrangement was made, and now Mr. Colt has employed Prof. Jackson of Boston to do it.

Ambrose Stevens.—I saw at Washington city, about a month ago, a superior apple, I took some to Albany for examination by the State Agricultural Society. The apple resembles somewhat, the yellow Newtown pippin. I deemed it so fine in quality that I made large inquiries as to its location, &c. It is from the valley of the Rappahannock river, Va. Its calyx is set in a deep basin, is somewhat russet about the calyx, most of the apples disposed to wilt but slightly, they keep well in the stores and are perfectly good to the tenth of March, but if kept in a low temperature, they would be preserved good till May. Their size is from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches in diameter. I saw more larger than the last. It has a delicious flavor, is very fine grained. Its figure a little oblong; while other apples sell for two or three dollars, these bring six dollars. Those who desire to obtain the trees or fruit, may address Benj. O. Taylor, esq., at Washington City. This apple grows on Col. Taylor's plantation, Mount Airy, in Prince William county.

Mr. Smith objected to the botanical terms as used by Mr. Stevens, but he referred to Downing for his authority.

Judge Van Wyck.—The Virginia pippin as described, reminds me of the old Newtown pippin, which had high flavor and such fragrance that it filled the room where it stood. That apple has greatly degenerated among us, doubtless, it has been propagated in Virginia, and maintains its original excellence.

Mr. Stevens.—We have a fine apple called the Northern Spy, which keeps till June. It originated in East Bloomfield, Ontario county of this State, from seed planted in 1796, in sandy loam, in a limestone region where the shales commence. It is singular that almost our first seedling fruits have originated in that region. My father planted seeds of the greening apple; that seed produces apples which are generally found to have six sections, some four and seldom eight. These sections are separately green and yellow.

Mr. Pike presented grafts from the Roxbury Russet, the Baldwin and the Spice Apple, from the nursery of Messrs. Reeves of Salem New Jersey.

Judge Van Wyck.—Our old winter pippin was a very fine apple. We are greatly indebted to Mr. Stevens for introducing us to the quality and location of the Virginia pippin.

Mr. Stevens.—Mr. Downing speaks of a Petersburg pippin, but it does not answer the description of the Mount Airy or Virginia pippin. He also speaks highly of the Spy apple.

Same subject continued,—Grafting, Pruning, and Budding. The Club adjourned.

April 18, 1843.

SAMUEL C. MOTT, in the Chair. HENRY MEIGS, Secretary.

Mr. Avery of New-York, presented to the Club some seeds of the genuine Cheese pumpkin. Mr. Avery obtained a premium at the Fair of Bridgeport, in Connecticut, for them recently. The pumpkins weigh from thirty to forty-five pounds each. The seeds were very acceptable to the members who know the character of the giver for uprightness and exactness.

O. S. Fowler, the celebrated phrenologist, presented seeds of the Marrow Squash, from Boston.

R. L. Pell, of Pelham, presented for examination potatoes of a new kind, dark colored outside and much colored within, very dense, requiring one hour to boil, becoming white and mealy in boiling. They appear to be quite a new and valuable variety. Mr. Pell also presented five stalks of Indian corn, with the sixteen full grown ears which they had borne, and Mr. Pell said, that having analyzed the corn plant and its fruit and ascertained its constituents; and having also analyzed the soil which he intended this corn to grow in, he added those chemical ingredients which were requisite for the corn and which were not in the soil prepared to be planted. He then put into every hill the portion of the requisite ingredients. On examination of the growth of the corn he observed that the roots instead of spreading as usual, confined themselves chiefly to the hill containing the ingredients. The ability of the stalks to maintain their erect position against winds was diminished; but ultimately the crop was such that many stalks gave three perfect ears and some four.

J. S. Skinner.—I observe that on the butt end of some of these ears there was a commencement of twelve rows of kernels, which imme-

diately changes to eight rows; these rows on our Indian corn are always even, never known to be odd in number.

Mr. Meigs said that perhaps some of his own experience and practice in the garden might be useful at this season.—Some practical operations suggested by long experience of the want, he had carried on for years, and he said he had found the absolute necessity of taking all manner of care for the first three or four weeks of the existence of plants in the planting and in the transplanting of several of our valuable plants. All the drill plants, especially onions, he had found methods of planting and weeding, which he believed to be of his own invention. After preparing the bed, making it very light, one foot deep, and well pulverized, he made indentations with the edge of a board, about half an inch deep, sowed the seeds in these little drills and then covered the seed about a quarter of an inch deep with Rockaway white sand, which has not a particle of clay in it; the effect of this was to enable the young onion, which comes up with its stalk doubled, to free itself from its knuckled condition easily and so go on to grow. He had observed how many suffered in common soil by being held by the tenacity of the clay in the soil, and so losing their proper constitution. The next point was weeding which he conducted thus: He used his forefinger to *push down* its whole length, all the weeds within two inches on each side of the onions, (and several other drill crops,) and also to push down those onions which he wished to have out of the way. The advantage in this was, not disturbing the young plants by pulling up either the weeds or superfluous onions in their neighborhood, a care not to be slighted, *for in the infancy is decided the future plant.* After having thus weeded the drills then he used a *sharp hoe*, (sharp enough to *cut weeds* so that they might not grow again,) to clear out the spaces between the drills. This method rendered it much easier to have a clear crop of onions, at the rate of three or four hundred bushels an acre, and of decidedly superior growth. He had followed the practice of old gardeners of shielding transplanted vegetables from the sun by means of pots, caps and other shelter, putting on some hundreds of them every morning for three weeks and taking them off at night. This tedious operation he saved by the following practice: When the nursling plants were ready he prepared the ground for their new station, used an *iron crow bar* to make the holes where they were to stand, he had long used a pointed stick, kneeling to the work, but found that standing erect, with the crow bar let fall, the hole a foot or more in depth was made with half the labor of the old plan, and swaying the bar enlarged the hole to some three inches diameter;

then he had a watering pot ready, with *soft water*, if it could be had, he then by putting in the spade as far off as possible, to lift the young plants, and as deep as possible lifted a bunch of them and carried them to the new position, then having filled a hole with the water, he selected one of the best plants, and holding it in the water in the hole, with one hand, he stirred in with the other hand, the light soil around the hole, moving a little, the plant up and down as the mud became thicker; as soon as the plant could stand upright in the mud he proceeded to another. The result of this method was that the pepper, *the most tender of transplants*, went on to grow without loss of a day, although transplanted at noonday in a dry and very hot time, so with Melongena, (egg plant,) a tender transplant; so with Cauliflower, Cabbage, &c. The plan seems tedious, but in my opinion it saves in the end fifty per cent. in the growth and perfection of the transplants.

J. S. Skinner remarked that the season of grafting and budding had arrived, and that he wished to give more publicity to the striking views of Professor Turner, in Downing's *Horticulturist*, on grafting—that Turner's suggestions were of great value. Mr. Skinner then read from the April number of Mr. Downing's book at some length, so much so as render it necessary for us to ask our friends to read that April number for want of space for insertion. Mr. Skinner observed that chestnut stumps put forth often vigorous shoots, which became stout timber trees. That some old farmers had found out that posts made of some locust trees lasted three times as long as some others. The peach trees of Jersey have been budded from budded trees until their life is very brief. The remarks of Mr. Downing are very curious and valuable. I remarked the singular growth of cedars near Baltimore—the form so exactly conical, as if trimmed for a hedge; yet I learned that when one of these was removed some ten miles off, it soon exhibited irregularity in growth.

Oliver Smith.—No plant produces its offspring by means of the bud or graft, or by cuttings; but only by its seed. The other processes are merely continuations of the old plant or tree. Potatoes planted, merely continue the old potatoe—it is no new plant as it would be from seed. This botanical truth is well known by all intelligent botanists. Every separate plant or tree has its own age like a man, and dies like a man. But from the seed springs up a new offspring—an entirely new plant. The Lombardy poplar, brought here many years ago, happened to be the male plant, and it has already died out of our country for want of the female. The doctrine that the vitality of plants is in their seeds, is far from new

Those who read Lindley, Gray, Torrey, Beck, or Decandolle, will understand it as a scientific fact well known, and the 47th problem of Euclid might as well be claimed now for a novelty.

Mr. Meigs introduced to the Club, Nathaniel Sands, an aged Quaker, who desired to speak of the first cast iron plough and Charles Newbold its inventor. Mr. Sands said that he and many other citizens, who are now seventy and eighty years of age, remembered Charles Newbold, a man of excellent character, who some fifty years ago became enthusiastically devoted to the project of an iron plough. He had contrived to cast the plough with such a form as then was unknown for excellence.—He obtained a patent which was exhibited to the Club, dated, June 26, 1797; but he had invented it as far back as 1790. Newbold spent several years and an estate of about twenty thousand dollars, in the attempt to introduce his cast iron plough.

He finally became poor, discouraged, and finally ended his days in a Lunatic Asylum. Mr. Sands had never heard it doubted that Newbold was the first man who invented the cast iron plough. Before his time, the hog plough was used—so called because of its very irregular movement in and out of the ground, like the rooting of a hog.

Newbold's plough was at first liable to break, and the blacksmiths were loth to mend it. The mould board and land side were cast whole. Mr. Sands paid ten dollars a piece for two of Newbold's ploughs, and used them in Orange county, and then considered them to be the very best plough he had ever handled. Mr. Sands said that this cast iron Newbold plough was the very basis of all the cast iron ploughs since made; that it was an excellent model, and all the improvements since made were based upon it; that Wood's patent was for an improvement of the plan of attaching the share. Newbold at last added a steel edged share to his cast iron mould board and land side. Thomas Jefferson tried Newbold's plough at Washington—approved of it and set himself to inventing a scientific mould board.

Mr. Meigs thought that, although the nation might object to the long continued monopolies of patents, yet that in every case of distinguished benefit conferred by any ingenious citizen upon his country, it was a duty, and one which would prove to be profitable to the nation, to mark that worthy citizen by a suitable present.

Mr. Wakeman moved that a committee of three be appointed to examine the claim of Mr. Newbold.

The Chairman appointed Charles Henry Hall, Judge Van Wyck, and Josiah Dutcher.

Dr. Underhill asked as to the model of Jethro Wood—how far it approached the Newbold plough.

Mr. Sands.—After many trials, Mr. Wood had to return nearly to Newbold's model.

Dr. Underhill.—It seems to me that something ought to be done for the widow and daughter of the unfortunate, but ingenious Newbold. Certain it is, that there has never been produced in the world so important an instrument as the plough of iron. The saving of labor and the amount of produce from the iron plough, are beyond all calculation in dollars, for the last thirty years.

J. S. Skinner.—On behalf of A. S. Sumner, of South Carolina, I present to the Club the printed volume and supplement of the proceedings of the State Agricultural Society of South Carolina.

Subjects for the next meeting—Grafts, Cuttings, and seeds. All members are requested to bring with them all such grafts, Cuttings, and seeds, as they may deem valuable for the purpose of a mutual exchange.

Teunis Bell, Rockland county, presented for distribution ears of corn, raised by him for Dr. Crispell, of Ulster county, N. Y. From one measured acre he had one hundred and sixteen bushels of shelled corn.

Grafts, cuttings, and seeds, were distributed, (about fifteen hundred grafts and cuttings.)

The Club adjourned to Tuesday next.

May 2, 1848.

JUDGE SAMUEL CHEEVER, in the Chair. HENRY MEIGS, Secretary.

ST. PETERSBURG FREE IMPERIAL SOCIETY OF AGRICULTURE.

The following translation from the Annales de la Societe Royale D'Horticulture, Paris, by H. Meigs, Esq., Secretary of the Farmers' Club, of the American Institute, may interest our agricultural readers.

Proceeding of the Free Imperial Society of Agriculture of St. Petersburg in 1846. By Mor. Parisot De Cassel.

The Royal Horticulture Society of Paris, has received at its session of November, 1847, the first Quarterly Bulletin of the Russian Society. In Russia they do not separate by any distinct line of demarcation, gardening from farming. It is a matter of curiosity to know the precise condition of these industries in a country still so little known as Russia! And to mark the ameliorations little by little which take place and afterwards put down solid roots on a large and generous basis.

Summary of Proceedings.—1. M. Odert de Giepenberg, Director of the Agricultural school of Mustiala near Tawasthus in Finland, presented a Seed Sowing Machine of his own invention, which sows both large and small seeds, with great regularity. It has been proved by an English farmer in Finland,—Mr. Philip Pusey.

The Society voted an idemnity to the inventor.

2. M. Prokopowitsch, a farmer of Tschernigow, presented Honey Combs on *elongated* bands, in long hives. This honey keeps better and is more easily transported.

3. M'Schutz, a member, is invited to translate into the Russian language, the work of Baron de Babs, on elementary agricultural chemistry. A translation of that work has been already made by a lady into French for the Society of Allier,—of which she is an honorary member, in 1846.

4. Wasa Rye being deemed best for the neighborhood of St. Petersburg, the Society ordered the purchase of eighty tons for distribution among the people of this region.

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5. M. Sheltuchin, a farmer of Pensa, presents a statement of his farm and its production. Also forty-eight different kinds of seeds from his farm and two herbals of his collecting. Also offers some poods, each pood is fifty pounds, also seeds for distribution and he asks for instructions to cultivate madder.

8. The Society ordered 200 roubles (about 800 francs) to be placed at the disposition of Doctor Johnson, author of a Russian Manual, treating of all the manures known at this day. On the condition of his giving to the society one hundred copies of the work.

9. M. Maurice Beyer,—Professor of Agriculture at Leipsick, a corresponding member, presents a Lactometer, called Grumppenberg.

10. Prince Davydow, submits for approbation an A. B. C. for the young children of cultivators. Instructions for country school masters and a pamphlet entitled "Religious Education of the agricultural classes in Russia."

12. Professor Ussow presents a translation into Russian of the essay of Mr. Black on the care of cattle. The society subscribed for 25 copies.

13. Mr. Oppenheim, of Vienna, sent imitations in *papier mache*, of diseased potatoes, in order to facilitate the study of the malady.

14. M. Nikitin sends the drawing and model of a plough used in the military colonies of New Russia.

15. Professor Ussow offers gratuitous lectures during the next winter, on Agriculture and Horticulture. This offer is accepted with acclamation and the society voted him a compliment of 300 Roubles.

16. M. Kleberg sends two models of ploughs, one of them invented by a Priest in New Russia, on which the ploughman can ride while at work.

18. On motion of Dr. Bergstrasser, the society ordered some bags of Leibig's manure, known as patent dunger, for experiment.

19. M. Schychowsky sends a copy of his translation into Russian of Lindley's theory on gardening.

The society subscribed for 25 copies.

20. A Schoolmaster came express from Bulgaria to St. Petersburg to ask from the society copies of all books of which it has duplicates. The society agreed and presented him with one thousand seven hundred and fifty one volumes.

21. The catalogue of plants in the Botanical Garden of New-York, was recognised as the most perfect of its kind, and the council proposed to have it printed, to serve as a model for all the Horticultural establishments in Russia.

22. The society subscribed for 10 copies of the Russian Flora in the Russian language, by Mr. Lewin.

23. On motion of the perpetual Secretary, the society engaged M. Prokopowitsch to write for the peasants a manual on the management of bees.

24. Dr. Johnson says that no kind of cabbage is cultivated in Finland or in Sweden, notwithstanding the climate favors the culture of all cabbages. Wood strawberries abound in the forests of Finland. An Horticultural Society is established at Mittau, in Courland, whose principal object is, acclimation of plants from abroad and their propagation. This society has a seed store where all seeds are sold to the farmers of Courland at the cost.

THE VALUE OF SUN-FLOWER SEED FOR OIL.

The following article on the value of sun-flower seeds for oil is copied from "Ruffin's Farmer's Register," and will add to the interest of that subject already elicited by the communication in the proceedings of the Farmer's Club in our last number.

ATHENS, August 25, 1839.

To the Editor of the Farmers' Register.—Although a stranger to you, I take the liberty of addressing you upon the subject of the sun-flower plant: knowing that you take a deep interest in any and everything connected with agriculture, &c. For the last five years my attention, (mental I mean) has been at times occupied on the merits of this plant, as a valuable addition to, if not a supercedent to our oils, now in general and unavoidable use. I have used the term mental because I have expended much more of thought than

manual exercise upon the subject. From the limited trials made, however, both in the culture of the sun-flower, and the homemade extraction of the oil, and the results in its use for domestic purposes, I am compelled to believe, that oil extracted is equal if not superior to any now in use; answering the place of Olive oil, for the table, and spermaceti, and all other kinds now in general use, for all the requirements of painting, lighting of lamps, &c., &c.

This may appear a very broad assertion to those who have for the first time had the subject brought to view, and to others who have fallen into the received opinion, that the oils now in use are the best, because they answer the immediate wants and requirements; not reflecting that it takes two or more of these specific kinds and qualities of oil, to supply the necessary wants and uses,—when this oil, if properly cultivated and prepared will answer, if not take the place of all others put together.

A grand desideratum, and which ought not to be lost sight of, is, that for lamps, it burns as long, gives a clear and more brilliant light, exhales no disagreeable or unhealthy odor, no apparent smoke evaporates from the wicks, and consequently leaves none of those dark and unsightly features of soot attendant upon even our finest oils now in use, all of which, without the aid of philosophy, is apparent to even the most careless observer, to be detrimental to the health of families thus using them, and repugnant to the olfactory nerves.

The remarks hastily put to paper, are intended to draw from you any information or experience you may be possessed of, in regard to the sun-flower plant, for the purposes here mentioned, or as food for stock or poultry; and you will confer a singular favor upon me, by letting me hear from you on the subject as soon as convenient.

With respect,

N. A. ADAMS.

May 16, 1848.

JUDGE VAN WYCK, in the Chair. HENRY MEIGS, Secretary,

Mr. Meigs read a communication from J. R. Stafford, Esq, of Cleveland, Ohio, on the subject of his patent method of drying and

preserving grain and flour.—(This will be given in our next number.)

Mr. Meigs called the attention of the club to the well known fact, that wheat and some other grain found in the catacombs of Egypt, where they are believed to have been deposited with the Mummies for two or three thousand years,—still preserved their vitality,—and consequently their qualities for food. Those catacombs are described as being perfectly dry.

Charles Henry Hall.—The process of Mr. Stafford is one of distinguished interest, as it relates to the preservation of bread stuffs, which are so liable to injury. To preserve grain, flour and meal in purity for distant transportation is of immense importance. We have recently sent considerable quantities to relieve the sufferers of Ireland, &c., of which I regret to say, large portions spoiled on the voyage, and much was even hove into the sea, being too much damaged for any use whatever. You remember that a few years ago, we imported wheat from the Black Sea, at the cost of two or three dollars a bushel,—and we frequently received it from there in a damaged state. It is a practice in the south of Europe, to dry their grain in the sun,—that was an ancient and is a modern method of preservation,—and anciently such dried wheat was stored in perfectly dry places, to be ready in the event of famine. It being thus preserved perfectly for years. Mr. Stafford here gives us a method by which our precious Indian corn, the staff of life in America, can be perfectly preserved for foreign and home consumption. I say precious, for it affords us bread, and in its oil, it is equivalent almost to meat.

The complete exclusion of moisture is alone necessary to preserve the bread stuffs for an indefinite length of time. I have, in my mercantile business, had much to do with them, especially flour,—and found the difficulties to be great, for want of proper drying,—I found flour so caked in the barrels that it required a chisel to break it up,—total losses to the merchant have been not unfrequent. It is indeed most evident that any process which will enable us to convey our bread stuffs pure and sweet to all parts of the globe, will be of incalculable benefit to us and the world.

Mr. Hall stated that the committee to whom the claim of the Newbold plough had been referred, had not had a meeting,—but that Judge Van Wyck, one of that committee, had prepared a report on

that subject and of the plough at large, which he recommended for adoption.

Mr. Meigs said that Josiah Dutcher, one of that committee had in writing, declined serving, on account of his being personally interested in the general question of who are the inventors of the best ploughs,—he claiming to have made great improvements, in cast iron ploughs, at great loss of time and money, a great many years ago, and believing that he was also entitled to the benefit of relief from his country.

Judge Van Wyck spoke of the claim of the heirs of Charles Newbold as highly worthy of the attention of Congress, that he was now ready to report in behalf of the committee.

Dr. Morehead, said that it would be well to appoint a special committee to examine and report as to the Stafford process for drying and preserving grain and flour,—that it was an object of great magnitude, and certainly not only desirable but indispensable.

Geo. G. Sickles.—The report just read is interesting. What can be more so than that which belongs to the history of that the greatest of all the useful inventions of man? I shall join most heartily in endeavoring to induce Congress to reward Newbold's family. You remember the ceremony of depositing (as it were a royal treasure) in the Tower of London, one of the first silk machines introduced into England. The first honors are due to those who bring out such benefits for mankind. I move that the report of the committee be adopted.

Mr. Wakeman.—There are many claimants for benefits conferred from time to time on the plough. They are all worthy, some especially so. The report just read is good. I second the motion for its adoption. I believe that the tests made by the Institute show that the plough invented by our deceased member, Cornelius Bergen, Long Island, required less draught than any other offered for trial. I was induced to believe that he had hit upon a principle, in the formation of that instrument, which accomplished the work with the least possible tractive power.

I wish that the peculiar properties of the Bergen plough might be examined and accurately described, especially as relates to the curvature of the mould board.

It was then unanimously adopted.

The Chairman.—The whole history of the plough is contained in the *American Agriculturist*.

Mr. Meigs said, that as it was desirable that our California Amole plant should be well tried here, he moved one bulb be given to George G. Sickles, and the other to Charles Henry Hall, to plant them, and report to the Club as to their growth, &c. Carried.

Mr. Sickles presented the catalogue of fruits and flowers for which premiums will be given at the monthly meetings of the New-Jersey Horticulture Society, and at their annual exhibition at Burlington, on the 20th, 21st, and 22d, of September next. This extensive list of flowers and fruits contains nearly all the native and foreign varieties that are known in the United States.

ANNALES DE LA SOCIÉTÉ CENTRAL (L'ATE ROYALE) D'HORTICULTURE DE PARIS.

Translated by H. Meigs, February, 1848.

At the session of the second of February, 1848, the Minister of Agriculture and Commerce sent to the Society a number of tubers, which he had received from Peru, where the Indians use it for food, and highly appreciate it. The Minister thinks that the study of this plant, which is new to our section of the world, might be useful. The Peruvians give it the name of Olluco.

Extracts from the Horticultural Journey through Russia, Pomerania, Prussia, Saxony, Bohemia, Denmark and Germany, in 1847, by Mon'r Masson, chief gardener of the Horticultural Society of Paris.

"St. Petersburg, on the banks of the river Neva, in $59^{\circ} 56' 31''$ North latitude, and $47^{\circ} 59' 30''$ East longitude from Paris, occupies a space of about forty-five millions and a half of square metres, of which flower and pleasure gardens have six millions and upwards, and the meadows and kitchen gardens have more than seven millions of metres. The elevation of this city above the Baltic, being eighteen metres, permits the warmth of summer to penetrate the soil deeper, and renders it more suitable for many flowers and leguminous plants.

In 1814, Peter the Great founded, for botanical study, the superb garden in the Island of Apothecaries. Afterwards the Emperor Alexander transformed the swamps of the Neva into delicious prome-

nades, which were soon followed by numerous elegant villas. We present a rapid sketch of the gardens. At the distance of some kilometres around St. Petersburg, the soil appeared to us ungrateful and difficult of cultivation. The vegetation is rickety, stunted; the woods chiefly willows, Alders, Maples, Aspens, and especially Pines and Birch. All these trees attain but a moderate height, except in the imperial parks and estates of the principal lords; but by way of revenge the woods and swamps are filled with an infinite number of bushes bearing berries. Among them we noticed the *Rubus Arcticus*, of Linnæus, Raspberry, (the *Chamæmorus*), and also the *Vaccinium*, (Whortleberry.) The fruit of the *Rubus* forms an article of considerable trade in the city, where they eat them as we do Strawberries. Notwithstanding this little fertility, yet the marsh grounds near the city yield well, and supply the city with vegetables. We examined the soil, and found it to be a silicious clay. The absence of forests permits the northern winds to exert their melancholy influence over the territory of the city—the climate is rude and very changeable. In common years the winter has 162 days of frost and continual ice; spring continues from 40 to 60 days, and it freezes regularly every morning and evening; summer has 143 days. The mean of greatest cold is 27° Centigrade— 16° of Fahrenheit; but there are always days in which the mercury is at 30 to 33 Centigrade—to— 20° —of Fahrenheit. The heat on the other hand is extremely great in summer, in June and July, the mercury being from 30 to 33 Centigrade—to 86° , and 91° of Fahrenheit. Frost begins ordinarily about the end of September and lasts till the end of April, and even to the middle of May. It may be said that there are but two seasons in St. Petersburg—winter and summer; for one can hardly call a few fine days spring, while the river Neva still presents its solid roads of ice. It is only in the beginning of May that the first luke warmth is felt, then vegetation developes itself with an incredible rapidity, and then in six or seven days in summer, which continues until the fore part of August. Storms are very rare in summer; those we saw were very short and not violent. One thing we have no idea of in France, and that is the ravishing nights of St. Petersburg during the summer. Imagine a sort of mysterious half daylight, soft, vapory, and I might say *veloutee*, (velvety) strong enough for one to read and write by, in the open air, at all hours of night in June and in part of July. We might say that the capitol enjoys *one day* of two entire months duration.”

Mons. Masson gives full descriptions of the magnificent gardens and conservatories on the Island of Yelaguine, the private property

of the Empress. This contains a beautiful park in the English taste. The garden of Tauris was founded by Potemkin, in 1780, and was designed by William Goold. The most striking part of this garden consists of its glass conservatories, which are upwards of two thousand feet in length. 14,000 pots of strawberries, of the Wyatt and Roseberry kinds, supply the Emperor's table.

Cucumbers are used to a great extent in Russia. The glass conservatories in the Island of Apothecaries extend in length more than three thousand feet. The botanic conservatory, or rather palace of glass, was commenced in 1845, and finished in 1847. It is supported on the north by an enormous wall, to protect it from the north winds. Eighteen columns support the roof. It is nearly four hundred feet long, nearly eighty feet high, and upwards of one hundred feet wide.

Mr. Wakeman moved that the thanks of this Club be tendered to Professor Shepard of Amherst College, for the copies sent us of his very interesting and able address on the subject of Agricultural Education.

The motion was seconded by Mr. Sickles and several others, who spoke of the great merit of the address, and was adopted unanimously.

Mr. Sickles, Chairman of the special committee on the Stafford grain and meal steam dryer, said that the committee had been diligent in search of all information on this subject, which is admitted to be of the greatest importance, and were not ready to do more than report progress now and be ready at the next meeting of the Club.

Mr. Wakeman.—Our estimable friend, Samuel Walker, of Boston, proposes to us a Horticultural Convention, to be held during our next Fair in October.

Charles Henry Hall proposes to include in it the Horticulture of the Island of Bermuda.

The Chairman proposes as our next subject, the curing of Clover and Hay—Adopted. The Club adjourned.

Dr. Underhill accorded with the opinion of the vast importance of any method for preserving bread stuffs pure both for home and foreign use, and for seasons of scarcity. The corn crop of the United

States was three times as much as the wheat. The corn cob retains its moisture for a long time, and of course the grain on it is very liable to damage in masses. It is found that the corn from such masses often will not germinate when planted. The *chit* turns of a dark color, and so does the heart of the cob. To secure good seed we hang up ears of corn separately in dry places, suspended by their husks. The small grains will not thresh out readily unless they are dry,—but our corn is shelled off the cob, whether moist or dry, and vast quantities go on ship board hear, that are unfit for consumption, and some cargoes on reaching Europe have nineteen out of twenty bushels damaged. It acquires a musty smell, although it may be apparently sound. This is a bar to its use abroad. If it was properly prepared, sweet and sound, immense amounts of it would be taken abroad, for we could spare probably three hundred millions of dollars worth of it in a year! and make it cheaper to the world than any other bread stuff. The old modes of kiln drying, &c., scorch it, produce the empyreumatic oil and smell. The process of Mr. Stafford seems to be what we want, a perfect drying without destroying the germinating power of grain! and preserving all the native sweetness.

The report of the committee on the Stafford process, at the 20th annual fair of the American Institute, highly approving of it and the award by the judges, of the gold medal of the Institute to Mr. Stafford, for it, was called for and read.

Charles Henry Hall read extracts from a letter from C. Reed, Esq., Charleston, Ohio, stating his experience of the perfect preservation of meal by the Stafford process, for upwards of a year, it not having in the least suffered deterioration.

The report of the committee of the 20th Fair is a good one; the subject is of too great a moment to be dropped, we must pursue it to completion. Let it be the special subject for our next meeting, and let our first merchants who deal in bread stuffs be invited to assist in the discussion.

Mr. Sickles concurred in the distinguished importance of this question. Our Indian corn is far more valuable than our whole cotton crop of the south. The plan of Mr. Stafford must be minutely and thoroughly investigated, and I move that a committee be appointed and that merchants be invited to unite with them, to examine the process. As to our Indian corn, it is destined to traverse the globe. We give the world cotton,—and we shall, before long, give it Indian

corn. Let such a committee report to the Institute at its next meeting.

Mr. Hall.—Invite bakers, also.

Dr. Morehead seconds Mr. Sickle's motion, it was adopted unanimously.

Mr. Hutchinson, of Cleveland, Ohio, grinds seven hundred barrels of wheat flour per day, and is satisfied with the Stafford process, thinks that every miller will have to adopt it, and that it will be of immense advantage to the United States.

Mr. Stafford remarked an acid thrown off from Indian corn while being dried by his machine something like the smell of oak shavings was sensible in the air of the room. It has been stated that cotton in the hold of a ship, with corn which became heated, was seriously damaged by what was believed to have been an acid proceeding from the heated corn.

Judge Van Wyck advised the thorough completion of this examination, for it is probable that the Indian corn of America is equal to that of all the rest of the world together, in quantity, and it is not improbable that Europe at least, will have to come here for some of it.

Dr. Morehead and Dr. Underhill had some conversation on the subject of the acid alluded to.

Mr. Sickles joined in the conversation, and concluded by advising that the subject of this acid be examined by the special committee.

Dr. Underhill remarked as to the wheat of our western country, that it contained more gluten than the wheat of the southern states; so much so that a little milk, or a little lime water, used instead of yeast, makes bread of it as light as a cork.

The Chairman appointed a committee on the Stafford process, consisting of the following members, viz:—Messrs. Sickles, Underhill, Morehead, Chilton, and Charles Henry Hall.

Mr. Wakeman moved that the regular subject be now taken up.

Mr. Sickles.--The subject is of too great moment to be discussed in a short time. We should bring to bear upon it all the intelligence of the best men that we can call to our aid. In our State Agricultural Society we have had serious debates last winter, and I have found the grey heads of the Legislature and the country handling this question with very great caution. Let us discuss it, adjourn, take it up again; not one day, but many days will be required for a proper discussion of it. I now move an indefinite postponement of the discussion.

Charles Henry Hall.--I visited Albany last winter, and the plan which I presented met with general favor; but the great difficulty seemed to be the location of the College and Farm. We, of the Institute, are not very easily turned from a good purpose, so we offered a plan for six State Districts, each of which should in due time have its College and Farm; but to begin in the city and county of New-York. This project was approved by the Governor and the Comptroller—it passed the Senate, and it was not passed by the Assembly merely on account of the crowd of bills. Massachusetts is contemplating such a college, to be established before our Empire State begins. I hope we may yet be first. And here let me say, from all that I know, that although we need the improvements in Agriculture, and must have them, yet we are not behind England in our agriculture as some believe.

Dr. Bommer, by an agent, offered to give one ton of his fertilizing powder to the members of the Club, for the purpose of testing its quality.

Mr. Sickles did not think it best for the Club to recommend any artificial manures,—of which experience teaches, that the second edition by no means equals the first.

Charles Henry Hall--from Ephraim M. Baynard, Esq., of Edisto Island, South Carolina, presented long staple Sea Island Cotton Seed,—and beautiful corn, the product of that island. It was stated that this corn which is of a pearly color and flint like surface, was grown from the common gourd seed corn of the main land. They were distributed.

Corn prepared by the Stafford process was distributed that its germinating power may be tested.

Mr. Sickles proposed the American plough as the next subject, and the report of the committee on the Newbold plough to be first taken up.--Adopted. The Club adjourned.

June 6, 1848.

SAMUEL ALLEN in the Chair. HENRY MEIGS, Secretary.

Lieut. Bartlett, of the United States Navy, recently from California, presented bulbs of the Amole plant, a native of that region. It resembles, somewhat an oblong onion—attains the size of a large onion—its leaves fibrous, so that the people make of them sweat cloths to put under their saddles. But of the bulb a singular use is made, that is, to wash their clothes. Without any preparation, this bulb is rubbed like a lump of soap, raises a lather like it, and is a thorough cleanser. The Amole likes a moist soil.

The Editors of the American Agriculturist presented the leaf stalk of Rhubarb, from the garden of Paul Brill, of Aharsimus, New Jersey. This stalk with two others weigh seven pounds and a quarter. The garden of Mr. Brill is within a hundred yards of salt meadows, nearly on a level with them, but is a rich sandy loam.

Mr. Meigs presented growing corn-stalks from gourd seed corn, dried by the patent process of Stafford, of Cleveland, Ohio. This corn was planted by me, since the last meeting of the Club, in order to test the vitality of the seed, as it would seem certain that all the good qualities of grain would be preserved by that process of drying, if the vitality remained in it.

Judge Van Wyck from the Special Committee on the Newbold plough, made the following Report.

THE PLOW. ITS HISTORY AND IMPROVEMENTS.

The Committee appointed by the Farmers' Club of the American Institute, of the city of New-York to take into consideration the claim of the family of the late Charles Newbold, of Burlington, N. J., for pecuniary aid from Congress, for the enterprise and skill of Mr. Newbold, in his life time to improve and render more perfect the American plough, report.

That the late Charles Newbold, a highly respectable and ingenious citizen of our sister State, about the year 1790, effected important and valuable improvements in the construction of the plow. The American plough then in general use, was a rude, heavy machine, and performed its work very imperfectly. It was known at that day by the name of the bull, or hog plough, from its extremely clumsy form and its irregular movement, in and out of the ground like the rooting of a hog. Mr. Newbold set himself seriously to work to improve it; he knew practically its use and what it was required to do; he reflected much on it, and studied its various parts: all of which he greatly improved, besides adding some new ones, and rendered the whole lighter, more durable, better formed, and more regular and steady in its movement through the earth. The ploughs in use in America at this period, were very little better than those used in England before the introduction of the Rotherham plough. Inventions and discoveries however useful and important, a knowledge of them might be to the world at large, did not travel at this early day, with the rapidity they do now. Our country was new, the oldest parts of it almost a wilderness, especially that portion subject to tillage or cultivation. We had just emerged from a long and expensive war, established our independence, every branch of industry, was in a low and depressed state, and especially agriculture. Mr. Newbold it is supposed had very little knowledge of the Rotherham plough as there were very few then in the country, although they had been in use in England 50 years or more. The ploughs then in general use with us were all wood except the share and colter, and these like the other parts awkwardly constructed, and at best a miserable imitation of the Rotherham plough. Combining some of the improvements of this last, with many of the imperfections of the hog or bull plough, Mr. Newbold after many trials and experiments by which he improved much the old plough, then in use, conceived the idea of a cast iron plough, and actually made one much superior to any model then used or known among us. For this he obtained a patent, dated June 26, 1797, which was exhibited to the club bearing all the marks of an authentic document. Mr. Sands, a respectable and venerable friend, who, in behalf of the widow and daughter of the late Charles Newbold, presented the document, said, that he and many other citizens who are now 70 and 80 years of age, remember Mr. Newbold well, to have been a man of excellent character, industrious and ingenious. So much engaged was he with his cast iron plough, and determined to make it practical, and the interest of farmers to use it, that he spent an estate of \$30,000 in experiments and attempts to introduce it. He became poor, discour-

aged, his reason unsettled and finally ended his days in an asylum. Mr. Sands said Mr. Newbold's plough was at first liable to break, and the blacksmiths were unwilling to repair it. The mould board and land side were cast whole. Mr. Sands paid \$10 apiece for two of Newbold's ploughs, and used them in Orange county, and then considered them to be the very best plough he had ever handled. Mr. Sands said the cast iron Newbold plough, was the basis of all the kinds since made in our country; that it was an excellent model and all the improvements made after this among us were based upon it. Newbold at last added a steel edged share to his cast iron mould-board and land-side. Thomas Jefferson tried Newbold's plough at Washington, approved of it and set himself to work to invent a scientific mould-board, which Mr. Sands understood he accomplished. That Wood's patent was for an improvement in the plough of attaching the share, that after many trials Wood had to return nearly to Newbold's model.

It is believed, and we think may (from the peculiar state of the country about 1790, and the circumstances under which this implement was produced) be considered as certain, that Newbold had no knowledge of Smalls cast iron plough, then used in Great Britain, as it is believed there was not one then in the country. Taking this view of the case, we think Newbold's claim to the invention of the cast iron plough, at least as great as Small's and if the former had not spent his estate and been otherwise unfortunate and had lived, in all probability, he would have made his plough as perfect as Small's.

To show more strongly the claims the family of the unfortunate Newbold have upon their country for some compensation, we will give here a concise history of the plough in the world, especially during the last 150 years. Among civilized nations, both ancient and modern, the plough has been considered the most useful and important implement in agriculture. It is emblematical of husbandry, in all devices, for this purpose it is the most prominent figure in the piece, and first catches the eye; it has for more than 2000 years, and is to this day used to designate the occupation of a farmer, "*that he follows the plough.*" It was the saying among the Romans, when they selected a general to command their armies, to take him, which they often did, from the class of farmers, that "*they took him from the plough.*" When the Republic was in danger and they wished to confer extraordinary powers upon a chief, whom they could trust, they often chose a practical Roman farmer of known merit. Some-

times when this was announced to him, he was found in a husbandman's garb, handling the plough and regulating his fields for seeds, and was requested to leave these for a while, that he might *handle* the sword and *regulate* armies ! Or when gathering and *saving* his crops, he was suddenly called upon to come and *save* his country ! This actually happened, as history testifies, and more than once was the Republic saved by such men, because they handled the sword, regulated and disciplined armies, with the same skill and success that they handled the plough, and regulated their farms. In those days, far back as they are, men were educated, not only for physicians, lawyers, warriors and statesmen, but for ploughmen, scientifically and practically. Science it was then considered not only made them better farmers but strengthened their claim to the highest honors of the State. It qualified them either for the farm or camp, they possessed the highly cultivated minds, and the hardy vigorous bodies which insured success in either or both. Such men, too, history tells us were among the most eminent Senators, they were considered the purest patriots and most enlightened statesmen, and took the lead in the Senate Chamber and Councils of the nation, and led these as well as armies, distinguished alike in peace and war. Such examples ought to be followed in modern times, especially by republics, and certainly by one, four fifths of whose population are engaged in the culture of the soil.

The Romans were the best farmers of all the ancient nations, they not only knew how to till the earth best, but they made and possessed the best implements of husbandry of their time. The *Roman plough* in its chief parts has been *the model of the modern plough*. Their best writers, several of them, on husbandry, and especially Virgil, describe the plough minutely in its principal parts. The head or sole, beam, handle, share or sock, coulter, and ear, or mould-board. These when put together show they had a philosophical knowledge of its use, a *moveable wedge*, to pierce, split, and cut the earth into furrow slices, and turn them over in an inverted position. After the fall of the Roman Republic, every thing went back in the world; retrograded for many centuries, including the plough, and there was no progress, no improvement of moment in this until about the seventeenth century, when favorable changes began to be made in agriculture, and of course the plough, in Europe. England then, as now took the lead, especially in the more important branches of the art; we shall therefore only notice the leading improvements in this valuable implement after the 17th century in Great Britain. The instrument which consists of many detached pieces may admit of

considerable diversity in their arrangement, and the form of these may be endlessly varied, without sacrificing fitness or utility; this circumstance affords to invention additional means on which to exercise itself. It has been so exercised in the structure of ploughs, and the variety of them, since agriculture has awakened much attention, which ingenious and enterprising mechanics have exhibited to the public, and put to proof in operations of the farm, has been so great as to bewilder the judgment, and to leave us almost in suspense as to their comparative merits. Most of these have been praised by their respective patrons and admirers, and for a time had their run, many have had a transient popularity, and a few only have escaped the common wreck and outlived their inventors. These last, it is only our purpose to notice, and in doing this endeavor to point out some of the reasons of their success, and which bid fair to secure to them perpetuity and their authors lasting fame.

Keeping in mind the old Roman idea of it, which is undoubtedly the correct one, that it is a *moveable wedge*, and that all the other parts attached to it are no other than necessary appendages to direct, regulate and drag it forward. The shape of this *wedge*, its size in length and breadth, the materials of which it is formed, the disposition of all its dependent parts, are circumstances, which will admit of considerable modification, but any change in these must be referred to this primary conception as the criterion of their merit.

The handles are of no other use, than to guide its motion;—the iron sock or share to give it a hard, sharp, penetrating point, the mould-board to throw off and turn over the furrow slice,—the coulter to cut the land and save the waste of animal exertion,—and the beam with its notched and moveable muzzle to regulate and govern the line of draught. The end to be accomplished is its *easy passage through the earth*, at the regular depth, with the least possible friction and resistance. All the parts must be adjusted and shaped to effect this *great end*.

Its head or which may be called the body of the *wedge*; should be straight, both on the side towards the land and the sole, that it may move forward without any material obstruction, and the length and breadth of both these, should be diminished as much as is consistent with steadiness of movement. Every inch of the side and the sole rub strongly on the ground, increases greatly the friction and resistance, and of course is a wasteful expense of the strength of the team. The mould-board which inverts the furrow slice may either

project from the body of the wedge at a sharp angle as in the old Scotch plough or in a curved line as in the English. The first may be pronounced at once a defective adjustment, as the furrow slice must maintain a powerful and continual resistance, whereas the latter throws it off with more niceness and facility. The sock or share fitted on the wedge may either penetrate the ground by a sharp point and tear up the furrow from the bottom by mere violence or it may be furnished with a feather to cut it off easily and with little hindrance or resistance. The beam may be pierced for one coulter merely to part the sod from the firm land and throw it off in an unbroken body, or it may be armed with two or more to cut it into narrow strips before it is laid over by the mould-board. Tull invented a four coultered plough for tilling grass lands: and he conceived that material benefit was derived from this contrivance, because in place of turning it over it was cut into small furrow slices before the sock raised it from the bottom and thus it was well pulverized. At the end of the beam there may be a simple muzzle to which the swingle-tree may be hooked, or one moveable on a pivot, and secured by a hind bolt to raise or depress the draught,—with the front divided into notches to incline the share either to the land or furrow side. In addition to these essential parts of this important implement of husbandry,—the plough—there is another which ought not perhaps to be overlooked: the throat or breast as we believe it is usually called, which may be formed in a straight line behind and equidistant from the coulter; or it may be fashioned into a gentle bend widening as it rises, that the danger of choking may be avoided.

It may be apparent from what we have said to all discreet practical farmers as well as mechanics ordinarily skilled in plough making that their structure may be almost infinitely diversified and that a great variety may be expected both with us and in Europe as a matter of course. To delineate the whole of these would be a vain and useless task, and therefore we shall only select for notice a few distinguished by a happy combination, or some peculiarity which seems to adapt them for our American husbandry.

The first improvement of note in the plough in England was effected by Foljambe of Rothram, about 125 years ago, and known to this day as the Rotheram plough. Before this period the plough in England was a rude, unwieldy, heavy machine, its parts badly adjusted, the points of friction or contact of some of these last with the earth numerous, thus increasing greatly the difficulties of its

passage through it, requiring more force to effect this and doing the work very imperfectly. The Rotherham plough obviated much, some of these defects, by a better adjustment and symmetry of its parts. The next improvement of importance was effected about 25 years after by Small of Berwickshire and called the *chain plough*. It received its name from the chain upon which the strain of draught fell whenever it met with any uncommon obstacle, and thus the size and weight of its beam could be materially reduced. This however was among the least of its great merits. By attaching a feather edge to the sock or share of such projection as to cut the bottom of the furrow the whole width, by contracting both the length and breadth of the sole, by giving the mould-board a waving or curved line, it lessened greatly the friction and improved much the execution of the work. On all light soils, it will perform easily with two horses, upwards of an acre a day, and form a more even and regular furrow. Before its introduction a pair of horses and one yoke of oxen were considered as indispensable to the drawing of the one in common use; and often six animals were employed with a driver. Thus the expense of cultivation was overloaded with a useless burden of implements, cattle, and men.

Small's plough has triumphed over all opposition, and has been generally adopted in Great Britain. At first it was constructed of wood and iron and weighed altogether about 75 lbs: but latterly it has been constructed entirely of iron, and its firmness and durability thereby greatly increased, without much increase of weight; it is very easily repaired, and if kept under cover will last a long time. There is a species of plough considerably used of late in England and Scotland, and formed on the small model, called the *Miner*, and by some the *Sub-Soil Plough*, which is intended to deepen the furrow and stir the earth without throwing it up to the surface. When used in this way it usually follows in the track of another and always without the mould-board, it has much strength and requires a strong team to pierce and tear up the hard crust which is apt to be found in most sub-soils 12 or 14 inches beneath the surface, with all roots and common sized stones. When the sub-soil is intended to be brought to the surface, the mould-board must be attached, it then serves the double purpose of deepening the furrow and bringing up the fresh earth to the surface; and in some soils, a strong team will be sufficient without being preceded by another plough. The old Yorkshire or Rotheram plough, combining with it some of Small's improvements is still considerably used in England and in some districts of Scotland. It continues to be built

in the head, beam and handles of wood, it has many advocates among farmers of great skill and experience. This too, or the model of it, we believe, to be the plough generally used in our own country. Still Small's plough as improved in all its parts, by the diligence and mechanical genius of its inventor, has a decided preference. He continued manufacturing and perfecting them with unwearied perseverance till his death, which was about the year 1797. Some are of opinion that the chain, which was attached to the improved Scotch plough, as Small's is called generally, is far from being a valuable addition. For the reason, that in case of any great or abrupt resistance, the shock is too violent, the chain yields not, like the beam with an elastic spring, and unless very strong sometimes parts: and accordingly it is now generally omitted in the construction. This part although of such importance as to give the implement its name, may be thrown aside without abating from its other good qualities. Its superiority is founded on the feathered shape of the sock or share, the ingenious curvature of the mould board, on the diminished size of the sole and land-side, and on the form and skilful adjustment of all the parts to the whole, and especially the muzzle or forward end of the beam by which the line of draught is regulated. To all of which it seems to be generally admitted, Mr. Small can justly lay the claim of invention.

In Mr. Small's time, and since, many additions and some improvements have been made by different individuals; the outlines though of Small's model, were preserved. Such as the *Argyleshire plough*, the *wheel plough*, the *skim weeding plough*, and the *double mould-board plough*. Some of these and especially the wheel plough are now little used, the two latter with many improvements since their introduction are much used, indeed for the drill husbandry and for all green crops now forming so great a portion of agricultural industry in Europe, and especially Great Britain, they are indispensable. They are a species of horse-hoe-machine, light and easily moved by one horse, if the ground is in the order it ought to be, and serves the purpose of the hand-hoe and spade in the garden.

The one extirpates the weeds, the other moving in the middle of the rows, with its mould-boards buries all weeds on each side, supplies fresh earth to the roots of the cultivated plants, and lays it up light and loosely that they can extend themselves freely in all directions. The same operation being performed a second, third and even a fourth time, it accumulates the bulk and height of the rows

or hills (for the system is applicable to either, the hills are rows with intervals between, and would suit our Indian corn as well as vegetables,) and supplies the crop with additional nutriment. Besides every successive earthing up deepens the furrow in the centre of the interval and brings up the subsoil to be mixed with the surface mould. By these repeated plough-hoeings the staple of the land is increased, a deeper, softer, and richer bed is prepared for plants, weeds of every kind eradicated, and so far from its fertility being diminished it is preserved and even augmented. It must be plain too, to every farmer that knows anything about the practice of ploughing, (and a great majority of them do) that correct and expert ploughmen are essential, nay indispensable for all crops and soils, and especially the ploughed and hoed crops, and the first breaking up for these the most important perhaps of all. This chiefly consists in drawing straight furrows and at a regular depth. When this is performed in the first instance, all after operations go on with order and facility; and in truth without this the *weeding plough* is perhaps injurious rather than beneficial. When the lines or rows in which potatoes, cabbage, turneps or Indian corn are planted and grow, are not straight and equidistant, this machine which from its moveable joint is widened to embrace the whole interval must encroach on, or interfere with the crop or must frequently be stopped and by the workman adjusted to occurring irregularities.

We expect it is not very unlike our cultivator, at any rate it is for a similar purpose, to extirpate weeds and stir the surface soil, and with the aid of the double mould-board plow must make more perfect work, and advance greatly the growth and yield of the crop. For as all plants are sustained principally by their roots, especially when young, the quantity of food which these reach and consume, must be proportioned to their range and extension. Of late the various parts of the weeding and double mould-board plow in Great Britain have been combined and modeled in to one, which diminishes greatly the expense, and on trial has been found equally efficient. By a slight change in the machinery it can be speedily prepared either for weeding the rows or earthing up the plants, and this gives it considerable superiority over the other two which have been nearly supplanted. The sock or share are furnished with two feathers, or or edges, and is of a triangular shape; the mould-boards are moveable for greater or less expansion, and can be separated from the body of the instrument when used as a weeding plow, in which latter case, two wings, armed with straight and curved coulter, are secured to the beam and also by means of hinges can be spread out

and contracted to correspond with the width of the intervals. Behind the sock and in the handles, are inserted tines or teeth, not unlike those of a break harrow, which stir the earth and cut up all noxious annuals when the plow is in motion, which lie or grow beyond the range of the sock or share, and the whole intermediate space is well stirred and hoed by the combined action of its sock and harrow teeth.

With this instrument a man and one horse will do much work, and also do it well ; and it is a decisive and unquestionable improvement in the modern system of agriculture. Correct plowing is the first and great lesson taught to and improved upon by the farmer, and the more perfect the instrument, the more perfect the work can be done. The very handling of the tool, independent of all view of its excellence, is of immense importance. It compels him to draw his furrows in straight lines, and to deepen his plowing. These two circumstances lie more at the bottom of good husbandry than is generally imagined. Some are erroneously of opinion that if they apply to land a good dressing of dung, they have done all for vegetation that can be effected. No theory can be more untrue and injurious. The soil that is properly opened by tillage, and frequently stirred by subsequent hoeing, will yield more abundantly than that which though rich in manure, is carelessly and imperfectly wrought; as much, and perhaps more depends upon the operations of the plow, than on the contents of the barn yard. This belief has had a mighty influence in the rapid strides which the art for the last sixty years has taken in Europe. Pulverizing the earth and deepening the bed, that the most delicate fibre may easily penetrate it, as well downward as in a horizontal direction, is the great object of plowing and hoeing. For this reason a garden is generally more productive than a field, because the deep thorough digging, and breaking of all clods and lumps into minute particles, by the spade, and the frequent hand hoeing afterwards, enables the roots to stretch to a greater distance every way, and supply themselves with a more various and abundant aliment.

No doubt the first conception of the horse-hoe and several of the improved models of the plow, was suggested and borrowed from the obvious and acknowledged benefits of the same operations on culinary vegetables. These hand tools, the spade and hoe, will answer on a limited space like a garden, but when we come in a field of many acres we want something which will move more rapidly, that will save labor, time and expense, and do the work as effectually, or

nearly so as in the garden. This the horse-hoe machinery accomplishes, and both the surface and subsoil are so continually stirred and kept in such a loose friable state by it, that at all times of the season the most delicate roots find an easy passage through them in every direction in search of food and moisture ; and this may be ascribed not more to the efficacy of dung, than to the complete pulverization of the soil. Thus the field by these various modifications, additions and improvements of the plow, is made to compete with the garden in the abundance, perfection and luxuriousness of its crops, and with far less expense in proportion to the extent of surface gone over. We could say much more on the advantages of a first rate plow, and good plowing, but we fear our length has already become tedious. A few more words on the American Cast Iron Plow. We will give here in further evidence of its merits in his own words as expressed at the meeting of the club, when the case first came before it, the opinion of Dr. Underhill, as possessing much weight. "It seems to me," he says, "that something ought to be done for the widow and daughter of the unfortunate but ingenious Newbold. Certain it is, that there never has been produced in the world so important an instrument as the plow of iron. The saving of labor and the amount of produce from the iron plow are beyond all calculation in dollars for the last thirty years."

Mr. Jefferson not only made improvements on the American plow, but many years ago he wrote a valuable essay on the most correct mode of forming the ear or mould-board. In this he estimates with mathematical precision, the size, shape and weight of the ear, compared with the other parts, and with the whole when put together, and also with the width and depth of the furrow. That important feature in the ear, the *curve*, its angle in all, its relations is minutely examined, and as far as we are able to judge, results reached, which give the whole investigation the appearance of arithmetical accuracy. This with most of the late modifications and improvements of the plow, are chiefly to diminish friction and resistance, to facilitate its passage through the earth without impairing its efficiency, and with the least possible force. Mr. Jefferson was in Europe during the revolutionary war, and no doubt examined pretty closely everything relating to agriculture there, noted all the important improvements, with a view of making them useful to his own country on his return. His science, experience and attainments, generally, enabled him to take every advantage of this information, and to suggest alterations and make improvements, whenever he saw these could be made to advantage. The essay in question is of some

length, and is to be found in the Edinburgh Encyclopedia under the head "Agriculture." We will merely observe, that Mr. Jefferson, in this article adopts the old Roman term *ear* (*auris*) for mould-board, and preserves it throughout.

David Peacock of New Jersey, about the year 1807, obtained a patent for a plough, the mould-board and land side of cast-iron, and in separate parts, the share of wrought-iron, steel edged. He copied Newbold's plough in part for the privilege of which he paid him we understand \$500. E. A. Stevens of Hoboken, about 1817, studied the mechanism of the plough, devoted his skill and ingenuity to improving it for several years, and succeeded. Many others, among us have been engaged in improving the plough for the last 30 or 40 years, and some of them have done much in effecting improvements. Such as Josiah Dutcher of this city, Robert Smith of Pennsylvania, Davis of the District of Columbia, Bergen of Long Island, Moore of Ithaca, and Joel Nourse of Massachusetts.

Peacock and Stevens, both, we believe, admit they caught the first idea of a cast-iron plough from Newbold's; and no doubt both made improvements in it. Others who have been engaged in the business, in all probability, caught the idea from the same great source, or from some one that did. Essential improvements, we believe, have been made in our country in the implement within the last 45 years, and by some of the persons named as well as others, either in one or more of its chief parts, or in some of its minor appendages.

We will take the liberty of naming here without his consent, Mr. Dutcher, who was on this committee with us, but declined acting. He is a very ingenious manufacturer of the cast-iron plough, he has been engaged in the business since 1819, and still continues it. Mr. Dutcher has made numerous improvements, some of them by good judges are considered important. He has also improved much the prairie plough of the west; owing to some defect in the patent laws, he has not received the reward for his labor and ingenuity, which he deserves. No man is more deserving of public patronage in his line of business.

We think from the facts and circumstances here noticed, and which, we believe, cannot be questioned, that the late Charles Newbold was the inventor of the first model of the American Cast-Iron Plough now in common use among us, and that he may be so con-

sidered independent of all that had been done about his time in Europe towards effecting the same great object. If so, ought not the public authorities of our nation to pay such respect to his memory as to confer some pecuniary favor upon his widow and daughter, whom we believe still survive him? The first must be aged and infirm, and the last cannot be very young, and we understand are poor, and struggling hard for a bare subsistence. Ought they not, we ask, to do something for them, to raise them from a state of penury, to one in which they may at least possess the comforts of life? Not let them be dependent for these at their age upon their labor and perhaps charity! If the late Charles Newbold had invented some warlike implement, as important for the destruction of human life as the plough is for increasing the means of sustaining and preserving it, then, perhaps, there would have been less doubt as to the success of our appeal. We hope not though, and cannot help thinking, that as ours is a government of fraternity as well as of justice, it will do something in the case here submitted, that will properly cherish the memory of a most valuable citizen, sooth the feelings of a few surviving friends, and near relatives, and stimulate the future skill and industry of a young and growing country. Certainly nothing can do all this more effectually than to place the widow of the late Charles Newbold, bending under the weight of years and infirmities, and his daughter in the decline of life, beyond want and dependence for the short time either have to live. Especially when this can be effected by a very trifling exercise of a great nation's bounty!

All of which is respectfully submitted, in behalf of the Committee.

SAMUEL VAN WYCK, *Chairman.*
CHARLES HENRY HALL.

June 20, 1843.

Mr. HOUGHTON, of Rahway, in the Chair. H. MEIGS, Secretary.

Mr. Chairman.—I was led into the habit of curing clover hay with straw, in Vermont, some years ago, by the scarcity and high price of salt. One season I had a large quantity of straw and clover, and it would have cost me fifteen or twenty dollars for salt enough for it. I thought then that if instead of using a peck of salt per ton, I should make my mow of layers alternately of straw and clover, it would do. I therefore put on the barn floor a layer of clover about six inches thick, then on that a layer of straw of about one inch, and so on the whole. I found that both straw and clover were relished by my cattle; that the hay was at least as good as any cured by salt, and I have no doubt my clover would have spoiled without the layers of straw.

Mr. Van Wyck.—What effect did you ascribe to the straw? Did it absorb moisture, in consequence of its being dry?

Chairman.—That was my reason for doing it.

Mr. Seba Smith.—Did not the layers of straw serve in some measure to ventilate the hay?

Chairman.—I think it did, for some time after the mow was made. When I came to foddering I cut all through the layers with a hay knife, instead of pitching it off loose.

I cut that clover in fine dry weather. I left it two days in the sun. I had boys to follow the mowers and spread the clover as fast as it was cut,—cut after the dew was off. I think that my cattle liked that hay better than they did the salted hay.

Mr. Meigs.—Any method by which a small percentage of our vast hay crop is saved, is of great importance,—that crop being more than a hundred millions of dollars: equal to two or three cotton crops.

Mr. Van Wyck.—And the chairman's method saves not only the hay and the salt, but the hay is the better for it.

Mr. Seba Smith.—Did you use Mr. Chairman, rye or wheat straw?

Chairman.—Both—but I like rye best, but some farmers prefer wheat straw. I speak of Vermont farmers, for this mode of managing hay became known there, but nowhere else that I know of.

Mr. Wakeman called attention to the method of curing clover hay, given by Varlo in his book on husbandry, published in 1785, in Philadelphia, with General Washington among a list of our most respectable citizens, the subscribers. Varlo says, "much depends on a good method of doing things, a good forecast, a ready method of getting forward with business. Such a man does more in one day than another does in two. A man's wits should always be about him, to catch all opportunities in *brittle weather*. Great precaution must be used to preserve the sap in hay. I see no reason (if hay be rightly made) why it should not feed a bullock in winter as well as in summer, when it was in grass; but this can never be done without all the real substance it contained in its grassy state, be kept in it.

My method is to cut my meadow (in rainy season) after it has rained a day or two, because the odds are above twenty to one, that it will not rain above two or three days together. Varlo proceeds to speak of his modes of handling hay in the field, and says that after the first day it is dry, or at farthest, on the second day, he makes foot-ball cocks of it. That is, he takes half an armful of hay, shakes it into a round heap, smooths the top of it, strokes down its sides with both hands, gathers all the loose ends into a lump, at the under side of the cock, so that the cock will be round; this lets the wind circulate round it and through it, &c.

For every ton sprinkle salt (in the mow). It is inconceivable the value that five bushels of salt would be of in a stack containing ten wagon loads of hay, or more salt; you cannot put too much."

George G. Sickles, from the special committee on Stafford's patent bread stuff dryer and preserver, presented the following report, which was read, and on motion of Mr. Meigs seconded by Mr. Van Wyck, unanimously accepted.

The undersigned committee appointed at a meeting of the Farmers' Club of the American Institute, held on Tuesday, the 23d of May, eighteen hundred and forty-eight, at the Institute Rooms, in the park, to examine "Stafford's Patent Revolving Dryer and Cooler

for drying and cooling grain, flour, meal and other substances," beg leave to present the following report and resolution :

Your committee, in order to obtain an accurate knowledge of Mr. Stafford's apparatus, invited him to put the whole in practical operation at the rooms of the Farmers' Club, in the presence of your committee and such persons as should be invited to attend. Upon the day appointed, the apparatus was shown to your committee and a number of strangers and others, who were present by invitation, and the whole process, which is extremely simple, of drying flour and meal, was practically demonstrated.

Mr. Stafford used a model before the committee, with a cylinder about eighteen inches in length. The flour and meal used was placed in a trough in which revolves a cylinder with several flanges fastened to the periphery, running longitudinally. The end of the cylinder connected with the steam pipe, is elevated so that the cylinder when in motion represents an inclined plane, the flanges stir the flour and meal upon the bottom of the trough, and in the revolutions of the cylinder to throw them up and carry them forward; the cylinder is heated with steam at a temperature of two hundred and twelve degrees Fahrenheit's thermometer, and from the time that the flour and meal enters the trough to the moment that the dried product descends into the cooling vessels, that part of the cylinder which is exposed to the action of the atmosphere is constantly loaded.

Mr. Stafford informed your committee that an apparatus to dry and cool the work which may be ground with four runs of burr stones, could be furnished at an actual outlay for labor and materials of construction for about three hundred dollars; that a single cylinder of sixteen feet in length and twenty-two inches in diameter, will dry and cool one hundred barrels, each of one hundred and ninety-six pounds of flour or Indian meal in a day, of twelve hours, and perform the drying or cooling in a proper manner.

Mr. Stafford's theory is extremely simple, and for that reason will be easily understood:

First. That the flour, meal or grain, is subjected in his drying and cooling apparatus by the agency of steam to a uniform degree of heat at a low temperature.

Second. That the drying and cooling apparatus invented by him offers an extended surface in a compact form.

Third. That the flour, meal or grain, while in the process of drying or cooling is constantly in motion, and by the combination of the steam and the motion of the cylinder, the moisture is effectually expelled.

Chemical analysis heretofore published, has shown that wheat, rye, buckwheat and Indian corn, and also the flour and meal manufactured therefrom when under the influence of water, air and warmth are either partially or entirely changed, so that the ultimate principles of each of the grains named (oxygen, hydrogen, carbon, and in some cases, nitrogen,) combine in new proportions, and of course form new compounds. To this process of decomposition the general name of fermentation has been given. It differs according to the substances acted upon, and the circumstances in which the article is placed. There were formerly enumerated five species of fermentation: 1, the saccharine fermentation, in which starch and gum are changed into sugar; 2, the vinous fermentation in which sugar is converted into alcohol; 3, the mucilaginous fermentation in which sugar is converted into slime instead of alcohol; 4, the acetous fermentation in which alcohol and other substances are converted into vinegar; 5, the putrid fermentation or putrefaction which characterizes the decomposition of organic substances, as wheat, rye, buckwheat, Indian corn and vegetable azotized substances.

Recent chemical experiments, combined with a more intimate vegetable analysis, show that our former knowledge of the process of fermentation was very limited; that the several phenomena of fermentation and the changes which it effects among the various subjects, are no less striking and mysterious than important in the several applications to the arts of life. Fermentations are now arranged into twelve classes: 1, the alcoholic; 2, the glucosic or saccharine; 3, the viscous or mucous; 4, the lactic; 5, the acetic; 6, the gallic; 7, the pectic; 8, the benzoic; 9, the sinapic; 10, the ammoniacal; 11, the putrid, and 12, the fatty.

The process of fermentation requires: 1, a temperature from 45° to 90° of Fahrenheit's thermometer; 2, the presence of water; 3, the contact of air; 4, the presence of a neutral organic azotized matter in a very small quantity, and of a crystalizable non-azotized

substance in considerable quantity. The former is the ferment: the latter undergoes fermentation.

The subject might be examined to an almost indefinite extent, but your committee will only add that Mr. Stafford's apparatus, when used according to his directions, puts an end to fermentation of every kind, to wit: The flour or meal is placed in the trough containing the cylinder, over the surface of which the flour or meal moves. The steam is admitted into the cylinder and expels the moisture which holds in solution the several fermentative qualities. When the flour or meal has reached the end of the cylinder (a period, in a full sized machine, of about eight minutes) it is ready to drop into vessels where it may be acted upon by cold air for cooling purposes—the process is complete—and the flour or meal is ready to be shipped to any climate, and will keep an indefinite length of time.

In the year eighteen hundred and thirty-eight one of the undersigned received from a friend a sample of wheat which it was said had been produced from seeds received from Pompeii circulated by the Emperor of Austria through the several ministers of legation at Vienna. Pompeii, we are told, was destroyed partly by an earthquake, A. D. sixty-three, and in the year seventy-nine was buried by a stream of lava and ashes. The lost city was discovered in seventeen hundred and forty-eight. In the year eighteen hundred and thirty seven what was supposed to have been a miller's shop was discovered; in the centre of the shop was a heap, which furnished a few bushels of wheat; the wheat was divided among the foreign ministers; by the ministers divided and afterwards sown and produced abundantly: the heap from which the wheat was taken was surrounded with lava and ashes in the miller's shop, and to the absence of air and moisture must be attributed its preservation for nearly two thousand years where it had laid lava locked in the bowels of the earth: a proof that if air is excluded, and moisture is extracted or driven off from wheat or its product, the remaining matter is indistructible. The undersigned regard any apparatus which has for its basis the preservation of the food of man as invaluable: and peculiarly so that at the present time when a part of the old world is deprived of the most nutritious of esculents. The United States offers her wheat, rye, buckwheat, either in the grain or made into flour to make up the loss, and adds to the treasure a crop of Indian corn of over five hundred million of bushels annually.

The American people in the year eighteen hundred and thirty seven had the experience of a year of scarcity with importations from Europe and the Black Sea ; In the year referred to and the following year our merchants imported large quantities of cereal grains and flour nearly all if not all of which had passed through the ordeal of imperfect kiln drying: but who can say that during his experience he purchased or knew of the purchase of a barrel or a pound of pure sweet flour or a bushel of sound merchantable grain? The flour was musty or sour, from fermentation, and the grain was equally affected. Mr. Stafford regards his apparatus as capable of overcoming all the difficulties that we have named and evenmore.

The undersigned have suggested that the process of fermentation commences at any point of Fahrenheit's thermometer above forty-five degrees and up to ninety degrees : with our extended sea board and inland seas: by the great lakes and western rivers, there is a trade carried on between state and state which far exceeds the foreign exports of the United States: and where our bread stuffs are required with an increasing market.

To prepare the superabundance of the grain fields of the great west, south west, and south for a market whether at home or in Europe, and to prepare the grain or flour with a certainty that either will keep in any climate, Mr. Stafford offers his apparatus; he has referred your committee to documents showing that in April eighteen hundred and forty-seven, a large parcel of corn meal was ground at Elyria, (Ohio); and in the month of May following shipped by the way of Lake Erie and the western canal to the city of New-York: The shipper offered to guarantee the meal to keep its flavour for five years in any part of Europe: The meal was afterwards shipped from New-York to Liverpool : Remained in store until the month of September, and then sold for more than any other descriptions of meal in the market. It had been three times transhipped before it arrived in New-York; remained in the city during a part of a hot summer, and in a climate the most humid proved superior to any in the market.

The European wheat and rye, and the wheat and rye flour which your committee referred to, were prepared by the old process of direct action with fire, or by the use of heated air : the process being incomplete the importations of grain and flour were sour and musty, or both repulsive to the taste, and injurious to the health.

Secondly. In the manufacture of flour from wheat or rye or buckwheat, your committee believe that the manufacturer endeavors to preserve the shade of the flour, that is the whiteness known to belong to the flour made from the several kinds of grains which have been named.

If it be desirable to expel the moisture after the flour is ground, and for that purpose the agency of fire be resorted to, whether in kilns or by the use of tubes, ovens or surface iron plates, the flour will be scorched more or less (whatever may be the degree of care exercised,) and of course discolored. This discoloration is superadded to the fact that fire, or the heat proceeding from kilns, ovens, or surface plates, destroys the cohesive property of wheat flour, rye flour, buckwheat flour, and indian corn meal, therefore your committee believe that when the agency of fire is resorted to for expelling moisture the flour or meal loses an essential property to make your bread.

Your committee have examined samples of wheat flour which were presented by Mr. Stafford, parts of a larger quantity from which sixteen and one-half pounds of water had been expelled to each barrel. Your committee had no personal opportunity of practical experiment, but the samples exhibited a cohesiveness which could not be distinguished from flour which had not passed through the drying process.

Your committee also examined samples of white and yellow Indian corn meal, prepared in a similar manner in which the cohesive property was retained; and it would have been difficult in the opinion of your committee to have decided that there was an actual difference between the cohesive property of the ordinary and the dried and cooled samples shown.

The cotton crop of the United States annually exported amounts to millions of pounds and the value is yearly increasing: The cotton crop however is confined to a few degrees of latitude, a mere spot, while the wheat and the rye fields, and the cultivation of the Indian corn extends from the St. Lawrence on the east to the Lake of the Woods, to the shores of the Pacific and thence in a line to the Gulf of Mexico and the Rio Grande; and then up that river in a direction to the Pacific ocean: It will require a numerator of many figures in a few years to calculate the grain crop of the region referred to, and after the native population and the domestic animals requiring attention have been fed, the balance will fall in the hands

of the merchant for sale; to preserve the mighty mass and to put it into marketable shape. Graneries, wagons, and mills, and canal boats, and steamboats, and ships, and *brigs*, and schooners, and sloops will be required: but before the grain leaves the farmer or the flour leaves the mill, the patent revolving dryer and cooler of Mr. J. B. Stafford, of Cleveland, Ohio, should be used; and your committee recommend its use with entire confidence, fully satisfied that it is the only safeguard for flour, and meal, and grain, against change of climate, and the various effects which arise in shipment and transshipment: and from a low to an increased temperature.

Your committee has before it a large amount of statistical information connected with the subject under consideration, but the great length to which this report has reached admonishes the committee not to trespass further upon your patience. Your committee beg leave to offer the following resolution:

Resolved, That the revolving dryer and cooler for drying and cooling grain, flour, meal, and other substances of Mr. J. R. Stafford, of Cleveland, Ohio, meets the approbation of the Farmer's Club of the American Institute.

All of which is respectfully submitted.

GEORGE G. SICKLES,
D. C. MOREHEAD,
JAMES R. CHILTON.
CHAS. HENRY HALL.

New-York, June 6, 1848.

Mr. Sickles.—One word before I go on the important subject of curing clover. In 1835 I tried for the first time a new mode of curing clover. I cut it on the 29th of June in very fine weather; as fast as I cut, I rolled it into small cocks, let it lay in the sun until noon day, then opened it to the hot sun for four hours, then I drew it in my barn, on the floor of which I spread it loose about two feet thick. I then spread over it about one foot thick, loose, of broken threshed wheat straw, and with like layers I completed a mow of about five tons.

In a separate bay I put a layer of loose clover about two feet thick and sprinkled over it Ashton ground Liverpool sack salt, which comes in sacks of about four bushels; I put about one peck of this

to a ton of hay. Throwing on coarse salt is throwing away money, except as it becomes manure. Between these stacks of clover, in point of goodness, I found no difference, the cattle liked the straw as well as the clover; it had acquired the flavor of the clover. Both mows kept green all winter. I got my straw by threshing my neighbor's grain for it.

Mr. Van Wyck.—I have heard Mr. Sickles' report on the grain and flour preserver of Stafford, with great pleasure; the importance of it cannot be magnified.

Mr. Meigs.—Even that our domestic bread may be freed from the evils of musk and sour so extensively felt.

AGRICULTURE OF OLD.

Mr. Meigs.—In the first edition of Dryden's *Virgil*, published in London by the Tonsons, in 1763, the Preface by William Walsh, contains the following remarks, which we think worth reading again in our time.

Mr. Walsh says, speaking of Virgil's pastorals: "We figure the ancient countryman like our own, leading a painful life in poverty and contempt, without wit, courage, or education. But men had quite different notions of things, for the first thousand years of the world. Health and strength were then in more esteem than the refinements of pleasure; and it was accounted a great deal more honorable to till the ground, or keep a flock of sheep, than to dissolve in wantonness and effeminating sloth.

There are still left points of the ancient esteem for husbandry and their plain fashion of life in many. Surnames and Escutcheons of the most ancient families, even those of the greatest kings. The roses, the lilies, the thistle, &c. Eight hundred years ago Charlemagne ordered his children to be instructed in some profession. Eight hundred years before that, Augustus Cæsar wore no clothes but those made for him by the Empress and her daughter. Olympia did the same for Alexander the Great. Nor will (the reader) wonder that the Romans sent for a Dictator from the plough, a man of four acres, too little a spot now for the orchard, or kitchen garden of a private gentleman.

Morristown, N. J., June 15th, 1848.

THADDEUS B. WAKEMAN, Esq.,—My Dear Sir:—When I proposed curing clover hay as a subject for discussion at the next meeting of the Farmers' Club, it was my intention to have been there to have gained wisdom from the mouths of the members present, but as I cannot, I will briefly state how I intend to proceed with a field of clover which I propose to commence next Monday.

1st. Mow only when the grass is perfectly free from moisture, either from dew or previous rains.

2d. Put into cocks of conical form the same afternoon it is mowed, and before the dew begins to fall.

3d. I intend by way of experiment to cover a few of these cocks with cotton cloth, painted on one side, a yard square, with a small hole worked in the centre, through which to run an iron rod 3-8 of an inch thick, sharp point, with flat head riveted on the top, size of a dollar, two feet long, to hold the cloth from blowing off, these I shall let stand several days, perhaps weeks, or until it has undergone a thorough heating and become cool again, I will then open and expose it to the air and sun for a few hours, and then haul it into the barn, to be fed out to milk cows during the winter. Now don't laugh, my brother farmers, with your three or four hundred acres, as you did some time since at a similar article which appeared in the *American Agriculturist*, calling us umbrella farmers; this is not intended for you, but for persons living near our large towns, and cities, who can get more nutritious food for cows giving milk, in this way at a less expense, than from any other crop by cutting three times and proper top dressings.

Clover hay has been greatly undervalued, owing to the bad management of the crop. In the first place it is frequently left to stand until the heads are fully ripe, and the lower leaves most fallen off, and then cut perhaps on a rainy day, or which is equally as bad, while a heavy dew is upon it, left to dry in a hot sun, carefully spread out, raked, and left in the winrow over night; if spread out next day, if it dont happen to rain, it has another days sunning, and by the time it gets into the barn very little is left of it besides the stalks, which no doubt called forth this strong expression from an Octogenarian, when his opinion of the load of hay standing before him, and offered for sale, would weigh a ton !! there never was a

on of clover hay, I have lived to the age of eighty years and never saw a ton fit to be called hay, under the above same clover.

I hope the subject of cultivating clover may be prepared by some one for discussion at a future meeting. Its importance as a crop for soiling, as a crop for hay, as a crop for manure, to be ploughed in, the importance of the roots to be dug up by the hogs on which they will live for weeks after the clover is turned under, and grow fat; let the members come forward with their facts, letting their light shine.

Very respectfully,
SAMUEL ALLEN.

Mr. Van Wyck.—I have cured clover and other hay, and I believe that I know something of the theory of it as well as the practice. We cannot borrow from England on this subject, so great is the difference between the climates of our country and England. As a general rule, here clover should be put into the barn as soon as may be, after it is cut, it should be dry, but not so dry as to cause the leaves to crumble. On fine favorable days it may sometimes be packed away on the same day it is cut, being either salted, or layered with straw. Our old friend Varlo says, let it lay two days, that is too long in good weather. When cured properly, the clover hay has a fine tea green color which always indicates its being in good condition.

Mr. Wakeman presented a letter from Dr. Underhill on behalf of the society of Agriculture and Horticulture of Westchester County, inviting the Institute to join them in ploughing matches at White Plains.

Mr. Meigs said that he understood that our Board of Agriculture had accepted the proposal. And also that it was highly probable that the Board would adopt the fine spacious grounds of the new Upper Bull's Head, thirty acres, and supplied with our inexhaustible croton water, for the cattle show in October.

Subjects for next meeting, adopted. Salt muck, hay crops, and turnep planting. The Club adjourned.

July 18, 1848.

HENRY HARRIS, in the Chair, HENRY MEIGS, Secretary.

Mr. Meigs read the following translations, made by him, from the latest French journals received by the Library of the Institute.

Horticultural Journey of M. Masson, Chief Gardener of the Horticultural Society of Paris, thro' Russia, Pomerania, Prussia, Saxony, Bohemia, and Germany.

Translated from the French by Henry Meigs, July, 1848.

The Palaces and Pleasure Gardens, which are for the most part situated at a moderate distance from St. Petersburg, do not yield to those of the Capital in that art and magnificence with which nature has been constrained to bend to the will of the Sovereign. Two of these residences merit our particular attention. I speak of *Tsarskoe-Selo* and of *Pawlowski*. A railroad, the oldest in Europe, for which they are indebted to the genius of Count Alexis Boboinski, conducts travellers to these two palaces, of which the first is called the *Village of the Czar*, and is situated about fourteen miles from the Capital, on the road to Moscow. Before you reach it, you will see a small Gothic palace, with graceful turrets—that is *Thesme*; it is worth visiting on account of its containing a collection of portraits of the Royal families of Europe.

Tsarskoe-Selo is first discovered by its fine gilded cupola, which gives it an air of pomp. This palace was in fact constructed by Catharine, and embellished by Elizabeth, and is truly remarkable for its grandeur and the richness of its architecture. The most precious materials, and above all, gold, have been prodigally used in its decoration. In the interior, a magnificent marble stair case leads to three halls, all richly furnished—one with mother of pearl, the second with amber, the third with Chinese Lacker.

The gardens and park were replanted and arranged in English style, in the years 1774 to 1789, by the celebrated John Busch. These gardens are of immense extent, and incredible *sumptuousity*. You are at every step surprised with some new spectacle, bridges of marble and of wood, artificial lakes, surrounding Russian mountains, Turkish Mosques, picturesque ruins, pyramids, obelisks rising above the masses of bushes and shrubs which garnish a lake; a Chinese village, a Swiss farm full of munificent cattle and stock from the hills of Tyrol; all these objects are scattered about with truly imperial profusion. To complete this assemblage, there is a small city which recalls the conquest of Tauris, and a delicious little temple, ornamented with a collection of statues of the greatest value

The hot houses extend about a mile and three quarters, full of beautiful fruit trees. The flower gardens contain immense numbers and varieties of flowers. Some of the conservatories are fairly carpeted with *Fuchsias*, and *plumbago capensis*, the latter of a beautiful blue, and of ravishing effect from its quantity of flowers, &c., &c.

“Some plants refuse hybridation, among them is Wheat. I tried poppy faithfully, by endeavoring to change the Tournefort poppy; but it still kept its red lively tint, without a shade of change. So of the grape vine, it seems to me impossible to hybridize it.”—*Loiseau Deslongchamps*.

Revue Horticole, Paris, April, 1848.

Arundinaria falcata. The gigantic grass of the Himalaya Mountains.

M. Van Houtte offers for sale this grass, derived originally from the cold regions of the Himalaya. This plant attains the height of from thirty to fifty feet, and presents the luxuriant vegetation common in the tropics, and at the same time the remarkable and precious quality of resisting intense cold. It inhabits the crests of the Himalays, the region of perpetual snow, along the northern slopes, in latitude thirty-one degrees, at an elevation of about sixteen thousand feet. It is singular that the southern slopes of the Himalaya are deprived of their forests much before the northern slopes; but the fact is beyond all doubt. Sometimes in snow beds, nine feet deep, this giant grass could not grow—there must be thaws. Van Houtte says, I sowed some seeds of this Bamboo last fall, and set out the young plants in open air; it bore the frosts of winter, losing merely some of its young stems. We desire to see this noble plant in our gardens and fields, it will be beautiful and useful.

EFFECTS OF SULPHURIC ETHER (CHLOROFORM) UPON SENSITIVE PLANTS.

The *Mimosa Pudica*, being placed under a glass vase with cotton, wet with ether, in twenty minutes the plant lost all its sensibility; could not be made to move by touching it with a pin at its most susceptible parts; some change in its color was perceptible. The plant was ten minutes insensible and then gradually recovered. This experiment was often repeated, and always with the same results. We tried the experiment on the *Oxalis sensitiva*, which is less irritable than *Mimosa Pudica*, and it did not lose its sensibility in less than twenty-five minutes, then recovered slowly.

Dionæa Muscipula, after twenty minutes, began to close up its young leaves gradually and then lost all its sensibility.

TO KEEP GARDEN ALLEYS AND PAVED PLACES CLEAR OF WEEDS.

Boil sixty quarts of water in an iron kettle, stir in fifteen pounds of lime, and from two to three pounds of sulphur; stir the mixture while it boils. Sprinkle the alleys and pavements with water having half of this mixture added to it. The ground will be purged for many years of all vegetation.

Mr. Meigs.—Varlo in his new system of husbandry, published in Philadelphia, in 1785, says—“Turnips require as much, if not more attention than any other crop. Their general use for feeding cattle in England, though more so than cabbage and carrots, is not of very old standing in England. But in fact, every vegetable of the sort has made a quick advance within the space of a few years. It is only two centuries ago since we imported green shoots from the Netherlands. The people in those days imagined that the climate of England would not produce garden stuff. The county of Norfolk is more forward in turnip husbandry, than any other part of England.

In 1748 I raised in Ireland, upon strong clay land, thirty acres, a crop of turnips which weighed thirty-nine tons per acre. Some of the best of the field produced at the rate of fifty-three tons per acre. The Norfolk farmers raise their turnips after fallow, and they plough three, four and sometimes five ploughings. The best farmer begins to hoe them when they are an inch high. Being thus thinned early they *apple* more kindly. After turnips they sow barley, and clover and rye grass among it, so that between the grasses being ploughed up and sown again there is only about thirty-one months; so there may be a crop of wheat, a crop of turnips and a fallow for each. This hoeing destroys weeds and improves both the land and the turnips. They who neglect this are great slaves and deserve to be pointed out and laughed at by every one. There is no land but what will throw up weeds except trenched land. The improvement which land receives by stirring and opening the mould, to let in the salts of the air, would more than doubly pay the expense. I have tried trenching and it is far preferable to any other tillage, which I suppose is owing to the staple of the ground being deep. The tap roots of turnips strike down, for though the body of the turnip lies above ground, yet it is chiefly fed by the tap root which runs down perpendicularly to a considerable depth. Best turnips have

but one long small root with only a few fibres branching therefrom. Varlo strenuously recommends the then newly discovered marvellous advantages of what he calls trench ploughing (subsoiling), and trenching with the spade; this he says is making a trench two or three feet deep, putting in manure, then the top soil, turf, &c. and sō on, so that the bottom becomes the top, thus the whole field, so that it becomes a sort of hot bed; the fermentation of the buried vegetation and manure keeps the ground warm.

Chairman—The turnip fly is a great evil in England.

Mr. Wakeman—I call the attention of the Club to the circular just issued by the Institute, relative to the 21st Annual Fair of the Institute in October next. The central point of the exhibition will be Castle Garden, the floor of which with its galleries, covered bridge and a building for the play of machinery by steam power, outside of but adjacent to the Castle; altogether give us a surface of about fifty thousand square feet, or over an acre. Here will be the vast assemblage of articles, and among them we look for beautiful manufactures from the hands of apprentices for whom we give in premiums five hundred dollars.

Our Cattle show will be at the new Washington Drove Yard, at 44th street and 4th and 5th avenues. Here are thirty acres, between two and three acres of pens watered by the Croton; stable sample for cattle and other stock, a hotel of first rate excellence resorted to by the first breeders in the country, and everybody can ride to it from the Castle for sixpence a piece! Our Ploughing Match will be at White Plains; the field of battle on 28th of October, 1776. A great and a new feature of the Fair will be a central fruit convention, consisting of delegates from Horticultural and other kindred societies, bringing samples of the best fruit, new fruits, &c. This convention will sit at Judson's Hotel, 61 Broadway, within five minute's walk of the Castle. We shall obtain the aid of citizens of e highest ability to speak of the great cause of American industry. We shall have original odes with original music.

Samuel F. Halsey presented timothy grass, beets, carrots, celery, corn, and nutmeg melons, the growth of his farm near this city.

Last year had thirty-six melons on one vine, grown in my guano manure; water melons of the greatest size. He will send a specimen of some to the Club.

Mr. Rice—We had sweet corn fit for table on the sixteenth day from the planting. We had radishes on Easter Sunday, the 23d of April. I sowed turnips and radishes at 6 o'clock in the evening of Friday and they were all up on Monday morning.

Mr. Harris leaves the chair and Judge Van Wyck takes it on request of the Club.

Mr. Romaine—Our timothy in Delaware county is very fine this season, we can tie much of it over our heads, as they say. Our apple trees are breaking their branches with weight of apples.

Mr. Van Epps—In my travels through this State, I see that the hay crop is very fine.

Henry Steele, of Jersey city, presented very fine beautiful and large gooseberries, an enormous amount on a bush, hanging under the limbs almost touching each other.

Captain William Burroughs, Newburyport, presented Croton oil seeds gathered by himself in Rio Janeiro, last March, being then ripe. The tree is about from fifteen to twenty-five feet high and grows somewhat like the fig tree.

The subjects—Salt muck, Hay crop and turnip planting continued. The Club adjourned.

August 1, 1848.

SAMUEL ALLEN, in the Chair. HENRY MEIGS, Secretary.

Mr. Meigs read the following translation made by him:

From *Revue Horticole*, Paris, 1848.

BANIAN FIG TREE.

There exists in the island of Zattevale, situated in the middle of the river Reva, or Nerbudda, a Banian fig tree, (*Ficus Religiosa*) celebrated through all Hindostan,—it bears the name of *Cubbish Burr*. It covers an extent of ground upwards of two thousand feet in circumference, with its branches. At a certain distance it may be taken for a hill covered with verdure. At the time of greatest freshets, when the island is partly inundated, the inhabitants find a refuge in this fig tree, who have to dispute with monkeys, birds, and even serpents. This tree is three hundred years of age. Seven thousand men have been under its shade at once.

From *Revue Horticole*, Paris, 1848.

CHINESE MODE OF MULTIPLYING TREES.

We have talked often very unreasonably about Chinese matters, for a long time. Even to this day we do not understand it. Horticulture is more advanced in China than in any other country. We borrow from them on this occasion, a plan between grafting and layering. They select a suitable branch of the tree, make a circular incision through about two-thirds of the thickness of the branch, then put cow dung in and over the incision, then put on a straw rope five or six times larger than the branch. All that is necessary after this is to keep the bandage moist, so that it can never be quite dry. Two months after this the roots will be found growing at the incision, then the branch may be cut off from the tree with the bandage still on, and planted immediately. The branch will give the fruit in three or four years plentifully.

Chairman.—The communication of Mr. Ward induces me to call the attention of the club to the important branch of farming, rotation of crops.

Judge Van Wyck.—Let us take up our regular subjects.

Mr. Wakeman.—I desire the club to hear the circular of the great Central Fruit Convention, which we are to have here during our fair. The circular was read.

Charles Henry Hall.—The object of this convention is to cause a supply in our markets of the best fruits which our country can produce, as well as to settle distinctly their synonymes. At present a Bow apple is a white, or a red, or a yellow apple, or just what you please to ask the seller for, he is ready with an apple to suit the name you give it.

Judge Van Wyck.—The name is from the Dutch of *Farm, Bowery*, the farm apple, at least that is my opinion, I may be wrong.

Chairman.—It is true that you may ask for twenty different apples, under the same name, and the seller will give it to you. I now call up the regular subjects of the day.

Mr. Wakeman.—Before you proceed with the regular subject, I call for the reading of one of the most valuable communications

which has ever been made to us on the subject of farming. It is from Professor Mapes, who is applying all his knowledge with great energy, to the working of a farm near Newark, in Jersey. We do not know of any instance where an able chemist like him has turned his whole attention and personal labor to that great operation. The communication of Prof. Mapes was then read.

Lyons Farms, near Newark, N. J., July 18, 1848.

MR. WAKEMAN—Dear Sir—By a letter received yesterday from Mr. Chambers, I learn that the committee of the American Institute which visited the farm occupied by me, were anxious that I should write out the description, rationale, &c., what was given them verbally when here.

The top soil is a clayey loam, 10 to 15 inches thick, underlaid by a thin stratum of clay, say 12 inches, under which is decomposed sandstone of the kind known as *kellis* or hard pan: even the highest point of land was wet and seemed to be perfectly impenetrable to the rain. The farm contains about forty acres, and generally of this character. The part seen by the majority of the committee has been for years considered as nearly unworthy of cultivation by my neighbors. The front part now occupied as a vineyard, is underdrained—drains twenty inches wide, 4 feet deep, and laid with open channel, at bottom made by laying two stones as wide apart as the opening will permit, covered with a large stone, and all interstices filled above with smaller stones, over which is placed shavings made by the cypress shingle dressers, with the earth on top—drains forty feet apart. The making of these drains in a seven acre lot, and the building of the front terrace on the road used over 500 loads of stones turned up in plowing this lot.

The whole farm is ploughed thus: Surface plough, Ruggles, Nourse & Mason's Eagle, No. 25, in all cases running two inches deeper than the surface soil, and followed in the bottom of the furrow by a horse sub-soil plow, running in full to the beam say, 20 inches. This sub-soil plow in all cases passing entirely through the clay and mixing the *kellis* with it, but not intermixing the sub-soil with the surface; it merely lifts what it cuts and lets it fall

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again in the same place, but turns nothing over; thus you will perceive, that although a slight mixture may take place between the clay and kellis from the action of the sub-soil plow, still it does not intermix the upper surface of the clay with the surface soil. Any intermixture there must depend upon the depth to which the surface plow is set to turn its furrow, not an inconsiderable benefit arising from the use of subsoil plow, is the slight lifting it gives to the upper furrow, thus causing its disintegration, which is not perfect from being merely turned over with the surface plow.

One argument in favor of deep plowing is, that immediately over my drains the crops are best.

My reasons for plowing to this extraordinary depth are these:

1. I wish to perfectly disintegrate my soil and take up a portion of the clay each year, to be converted into soil, thus deepening the soil.

2. To incorporate the kellis with the clay so as to render it penetrable to water, and still more important, to admit the atmosphere.

3. The advantages to arise from sub-soil plowing are :

Less liability to suffer from drought, the roots can go down and find moisture. More surface of particles is exposed to the action of the atmosphere, and for the reception of ammonia and carbonic acid. The absorption of these ingredients by soil being, not in proportion to the quantity of soil, but to the surface of disintegrated soil exposed.

The more minute division of soluble and semi-soluble manures, by occupying the surface of a greater instead of a less number of particles, and being thus better conditioned to receive the necessary quantity of oxygen for complete preparation for assimilation with plants.

Those who argue that ammonia is not a manure, nor that nitrogen is necessary as a component for plants, will at least accredit it as a necessary assimilating agent, and that the supply must be from the atmosphere, or to be abstracted from rains which have received it from the atmosphere. In my soil, at least, I do not fear losing any of the virtues of manures by too deep disintegration, for by filling a cask four feet deep, placed on its head with the soil in the same

succession in which it occurs in nature, and pouring a quantity of water on the top containing a much larger proportion of fertilising materials than would be used in practice, the water after leaching through contains no trace of its soluble materials—thus proving that the soil within this depth is capable of absorbing them if sufficiently disintegrated. Again, the water discharged at the mouths of my under-drains, although the land is highly manured above, contains no trace of the constituents of the manures soluble or otherwise.

But be the rationale what it may, I do know, even by my short experience, that the crops are better with ten loads of manure to the acre, and deep plowing, than with twenty-five loads and shallow plowing. I now of course refer to such soil as I am now working.

Last summer, during heavy rains, the water run over the surface, carrying away to the low lands not only the gases it contained, but all the manure it could rob from the surface. Since subsoiling and underdraining, it sinks into the soil and is delivered from the mouths of the underdrains, robbed of all it contained by the well disintegrated earth through which it had passed.

MANURES.

My greatest resource for manure is the great Jersey meadow, reaching from Newark to Bergen, every foot of which is capable of being converted into manure of the best quality. A single inspection of this meadow will convince the observer that its upper stratum is composed of *organic matter not in a state of decay*; and from its surface being parallel to the water level, it is also evident that this mass of matter is the result of washings from the uplands by rains for centuries past. Since its deposit, such portions of its own vegetable matters as receive their carbon from the atmosphere, has increased the mass. Does it not naturally suggest itself, that to restore vigor to the upland, this matter must be carried back to where it came from?

To render this material suitable for manure, it is only necessary to put it in a state of decay, and this I do by several methods,—indeed, I have tried all the methods given by Johnson, Dana, and others, and they all answer the purpose well.

1. The cattle stall, containing six oxen and three cows, will make more than one cord per day, equal in quality to horse manure. I arrange it thus:

Under the hind feet of the cattle is dug a gutter two and a half feet deep and three and a half feet wide; its surface should be covered with Rosendale cement made fluid with water and put on with a watering pot until the earth refuses to absorb the moisture; in two days it will be solid and hard as stone. Fill this trench with meadow muck to the level of the stable, and cover it with salt hay or straw as bedding; the fluid manure voided by the cattle will pass through the bedding and be absorbed by the *muck*; every four days this mass is taken out—that time being found sufficient to supply it with the materials for decomposition; it is then placed under a shed, and in three weeks in summer, or ten weeks in winter, it will be as fine as the best stable manure, having gone through the heatings and fermentation. I am perfectly convinced that the urine of animals received by muck while the animal warmth is in the urine, and then assisted by the warmth of the body of the animal lying upon it at night, will decompose ten times as much as would be decomposed by the same amount of urine previously suffered to cool in a cistern.

Each time this trench is emptied, the surface is covered with charcoal dust,—thus all smell is prevented.

My hog pen is made a valuable adjunct for the manufacture of manure from meadow muck;—it is thus constructed: A trench is dug two feet wide and five feet deep, around a piece of ground as large as wanted for a piggery; fill this trench with stone, and then grout between the stone with a fluid grout composed of one part of Rosendale cement, two parts of sand, the whole fluid with water and poured in as fast as mixed, until full to the surface; in a few days this wall will be solid as one stone, and impervious to water; then dig out the trench inside the wall three feet wide and one and a half feet deep, varying the depth in different parts, so as to render this ditch a series of inclined planes. Before digging out this inner ditch, saturate the earth on the inside the wall with soapers' waste, or spent lye, and as dug out, it may be used as manure. Thus we have a cistern of stone with a mound of earth in the centre, and a ditch between the mound and the wall. At one end of this enclosure place your hog pen, and make this mound of earth the running ground for the hogs. Every day (if you have ten hogs)

throw a cord of muck on this mound; all your weeds, and occasionally a handful of shelled corn—the hogs will incessantly root, mix up and turn over the muck, and giving them exercise, and you manure. As fast as the muck is made, it washes down into the ditch, and with the water received from rains, this ditch will make a good wallowing place for the hogs. Alongside the hog pen, place a covered shed, with the bottom cemented, and so placed as to discharge fluid into the ditch of the hog pen. Once in every ten days, throw the contents of this ditch into the shed, and should there be any more fluid than necessary, it will run back into the ditch; should the quantity of fluid seem too great, after heavy rains, &c., you have only to bale it upon the muck on the centre mound, with a pail on the end of a pole, thus decreasing the quantity by evaporation and absorption; this, however, will seldom be the case, as the hogs prefer the mixture in the ditch to be of a consistency not quite fluid, and will push the muck from the mound and make the mixture to suit themselves. The contents of this shed is always ready for use as manure, and its quality is most unexceptionable.

A similar arrangement to that used in the cattle shed, is also used in the horse stable.

All the house wash should be absorbed by the meadow muck.

With six oxen, three cows, three horses, ten hogs, the results from house, &c., are at least two cords of manure of prime quality may be procured per day, by the proper use of salt marsh or meadow muck; and if the manure should not be wanted for three or four months, in winter, the quantity of muck should be permitted to remain under cover free as possible from currents of air. Should the muck heaps at any time show great heat, cover them with powdered or fine charcoal, or well dried muck, and the gases will be retained and absorbed.

Should a larger quantity of manure be required, it can be procured from the above means. It may be made from swamp muck thus :

Muck always well dried; dissolve one bushel of salt in cold water; with this solution slake two bushels shell lime, fresh from the kiln and caustic, turn over this mixture every day for nine days, then mix with one cord of swamp muck, and turn over every ten days; at the end of thirty days in warm, or sixty days in cold weather, it

will be found to have decomposed the muck perfectly, and to be an active manure. This recipe is given both by Johnson and Dana.

Wood ashes, decomposed muck, indeed any of the alkalies in any form, except lime,—lime should never be used unless previously slaked by salt, and then the results are chloride of lime and carbonate of soda, and none of the after changes are detrimental to the soil.

Muck as a manure has many advantages, particularly that from salt marshes. Wherever it is freely used, the grub will disappear. It renders sandy soil more retentive of moisture, without being more compact or hard. It renders clayey soils or hard pan soils free and more easily worked; if used in excess, it does not create diseases in plants, like other manure, but will remain until called for by growing vegetables, absorbing ammonia, retaining excess of moisture, &c., &c. As a disinfecting agent, muck if properly dried, is nearly equal to charcoal, particularly that which has been decomposed by lime slacked with salt. Mixed with night soil, it renders it inodorous in ten hours.

For the purpose of experimenting fairly, I have used many other kinds of manures; I may here enumerate :

Leached ashes; night soil made into poudrette with muck and charcoal; hair waste from tanneries; butcher's hog pen manure; leather chips; hen and pigeon dung, after having been used by carriers, &c., &c. Of these manures and their comparative value I can speak with more certainty after another year, but at present, my impressions are, that poudrette made with night soil, muck and charcoal, as the absorbent and disinfecting agents, is worth many times its bulk of any other manure. Have also used bone dust partially decomposed by sulphuric acid, soaper's scraps, dead animals, &c.

As to crop, vineyard or front lot: Plowed a poor soil last fall, run surface plow 17 inches deep, and followed in bottom of furrow with subsoil plow set at 18 inches, put previously on top of soil 40 loads to the acre of swamp muck decomposed by butcher's hog pen manure.

Planted 1250 grape vines, rows 12 feet apart, distance between vines, 8 feet. For each vine made a hole 3 feet deep, 4 feet diame-

ter, put in each hole two handfuls of leather shavings, one bushel manure, same as above, a little soil placed in the vine, covered the roots with soil, put on another half bushel of manure, and fitted up with soil, watered freely; early in spring planted potatoes in drills, between vines, 4 feet apart, (nutmeg potatoes,) potatoes fit for table June 1st, as new potatoes, but not full grown; 20th June put on cabbage plants between rows of potatoes, one plant every 2 feet, being equal to 5445 cabbages to the acre, they have grown well; shall dig the potatoes to-morrow, (July 21st,) and shall plant double rows of white globe turnips between the cabbage rows in place of the potatoes. Expect the crops to be, in addition to the grape vines, (to the acre): 300 bushels potatoes, 5000 cabbages, 600 bushels turnips.

I have neglected to say, that before planting the potatoes, the surface plow set at 17 inches, was run three times through the lot, in addition to the original plowing, and then followed twice by a deep cultivator. This course I was compelled to adopt for the purpose of exposing and removing all the stone, as no opportunity would be conveniently offered for doing so, after putting up trellises for the vines.

I am selling, or rather engaging the potatoes, deliverable in the winter or spring, at \$2 per bushel, for seed. They were as dry and sound when planted this spring, as when dug last fall; mealy when new as well as when old, never have been diseased, and yield well. The nutmeg potatoe has now been cultivated six years, without disease of any kind.

The crown of the hill behind the vineyard was a sorry spot last fall, being the summit of a hill and the ground declining in every direction, the soil was completely washed off. The clay stratum here is but slight and mostly washed away, exposing the kellis or sub-soil, stony to a most disheartening extent. My agricultural friends and neighbors advised me not to try to cultivate it, but if I did, certainly not to plow as deep as in other parts of the farm. I covered it with decomposed muck, 62 horse loads to the acre, and with two yoke of oxen to each plough, (surface and subsoil,) went as near *Pekin* as possible; then run the surface plow five times, and the cultivator twice before planting; last fall put out currants, and this spring between the rows of currants, say 3000 cauliflower and Brocoli plants raised from seed put in hot beds in March. All anticipated an entire failure with this crop, but the result has proved

that no piece of land, not even an old garden could have succeeded better. The cauliflowers and Broccolis have all headed finely, and I have been selling them for more than a month. Perhaps it is but fair to say that the season being wet has helped me much, as some failures in heading cauliflowers are naturally expected, but we had none; they were all perfect.

Your committee saw the rest of my crops, and therefore it will be unnecessary to detail them.

On the place are several hundred apple trees, which have been generally thought to be worn out. For these I adopted the plan of Mr. R. L. Pell: scraped off the old bark or rather its roughness, and with no tender hand, the green and white continually being exposed, laid bare roots and cut off smoothly some of the larger ones, deemed the upper roots, rubbed bark and roots with soft soap, ashes and white sand, manured with decomposed muck, and replaced the soil; on top of soil around each tree placed one peck of unslaked shell lime, trimmed out cross branches, suckers and old wood, when the caterpillars made their appearance this spring, attacked them immediately. They do not leave their nests before 8 o'clock in the morning, and return at 5 1-2 P. M.; had lamps constructed thus:

Tube 13 inches long, 2 inches diameter, on the end of 12 feet pole four small tubes projecting from the side near the end, a quarter inch diameter, each with wicks; filled the lamps with camphene, lighted and burned up the nests from daylight to 8 in the morning, and after 5 P. M. Mr. Pell's plan of using aqua ammonia will not do with Jersey caterpillars. I poured triple F. ammonia over some caterpillars in a saucer, and left them immersed two minutes. They *seemed* dead. Poured off the ammonia, placed the saucer in the sun, and in less than an hour they walked off apparently much obliged for the cleansing. But thanks to Mr. Pell, he is nearer right in his mode of treating trees, for all mine have fine crops of fair fruit, better I think, than ever the favorable season would warrant, without the treatment named.

My success thus far with globe artichoke, sweet potatoes, Kohl Rabe (*Brassica rapa esculenta*) &c. &c., seems to promise well.

Am engaged making opium from Lettuce, but cannot as yet decide if it will pay.

Tried an old plan, but to me new, for raising potatoes, place the potatoes *on top* of the ground, cover with 4 to 6 inches of sedge grass (3 square) and they will grow ; they have grown finely; where the sedge grass are too thin, the potatoes are bitter, but where 4 to 6 inches are used they are more regular in size and of as good a quality as those raised under ground ; no weeds, no cultivation.

Crops now in progress, cabbages of all kinds, two acres of melons, cucumbers, lima beans, squashes, sugar beets and ruta bagas for cattle, carrots, parsnips, &c. &c., indeed all the vegetables to be found in Bridgman's catalogue, no hay nor oats. Am of the opinion that market garden locations cannot compete with western New-York, Ohio, &c., in raising grain or fodder crops, while hay can be had at \$10 per ton and other standard prices in proportion.

Having kept accurate accounts of manures, plantings, and every thing else, connected with my operations, shall be ready as the season progresses to answer any questions the institute may have to ask in relation thereto, and should be glad to see a Committee as often as once a month during the season to examine my progress and favor me with their advice.

Yours, Respectfully,
J. J. MAPES.

Charles Henry Hall.—I wish that some gentleman who has visited that farm, would speak of it. Here is science clearly and practically brought home to the farm. What Davy, Liebig, Johnston, Bouscungault have taught, here is by an able head and hand done, so that we shall now come to some fixed conclusion. I move that Prof. Mapes' excellent paper be laid upon the table, in order that it may be taken up at a fuller meeting than this. This motion was seconded and adopted unanimsly.

Mr. Wakeman.—In consequence of the alarm as to disease in Cows &c. I move that the subject for next meeting be "The Prevailing Disease in Cows &c."

Chairman —One farmer in Westchester has already lost two-thirds of his cows by this unknown disease. Subject Adopted.

Judge Van Wyck.—I think we had better spend the remainder of the meeting on the subject of hay, this being the season of making it. The great object in curing hay is to preserve the juices of the

grasses while we are converting them into hay. Almost all plants at maturity contain woody matter, and we should make hay before that woody process is finished, or even made much progress, or we have much of our labor lost. The farmer must watch,—he must never let the grass seeds become hard, as is the rule with some. He should cut timothy when in blossom, and his clover too before the flower fades. And to preserve it when cut, it must be much stirred and not left long in a hot sun, and kept as much as possible from the rain and dews, and cocked every night, and then you preserve its nutriment, and green color. In Europe it is common to pack hay with layers of straw and to salt it, it is done with us too, a good practice especially when green or moist. I prefer putting hay into the barn, instead of stacking it which causes it to be too close and compact.

As to our subject, Turnip Crop, I do not think that we shall, at least, for a long time to come, use the turnip so freely here as is done in Great Britain, and elsewhere. Our Indian corn has such properties of superior value,—is raised in such vast quantities, with little labor and risk, that we are not dependent at all upon turnip. Chemical analysis shows that turnips contain ninety-two and a half per cent. of water,—It does not fatten cattle fast, with this quantity of water, it can't contain as much nutriment as many other substances.

Charles Henry Hall.—The gentleman speaks of England with its small spaces for culture. It is true, our wide spread Savannas, our almost boundless prairies, the immense vallies of our rivers, with the blessed climate for our Indian corn, present a very widely different aspect. England's moist climate is favorable to the turnip, and she uses it freely, she has no Indian corn. Her sheep feed and fatten upon turnip. Who has not heard of her mutton? Chemical analysis of a turnip will hardly show how that mutton becomes so fat. It is done by an Almighty Providence. Apples contain a very large percentage of water, but our apples, the sweet ones especially, fatten horses and restore them to health when sick; hogs fatten on them. The Swedish turnip, Ruta Baga, was carried to England and we got it from them. Immense crops of it are used for the winter, and with some forage they fatten their cattle, The Swedes first took our American grasses. France afterwards adopted them. Our lands can give us five hundred bushels of turnips per acre, at little expense in cultivation. Cattle can be fattened in winter in the barn by proper feed of roots and forage. Lucerne was cultiva-

ted in the most ancient times. We do not grow it much. I have seen it flourish in Valencia, of Spain, and it will grow just as well on Long Island. It will furnish as much milk as any other feed. Alderney cows are said to give the richest butter in the world. Guernsey which feeds them on Lucerne and Parsnips, can do it, but the Aldernies don't give us such butter here. If we should feed them as Guernsey does I have no doubt we should have as rich butter.

Obadiah Elliot, of Jersey.—On my farm I have had two crops in the season. First potatoes, which I dug about the tenth of July, then Ruta Bagas, dug in the fall. I had two hundred bushels of potatoes per acre, and five hundred bushels of turnips. I ridged up the potatoe field wih a pair of cattle. I raked off the lumps, then dragged a roller, drawn by one horse over it; the roller having ridges on it to make drills eight inches apart. I had these drills in rows, three feet wide. I had put on twenty bushels of fine bone dust, not the common coarse article, that don't act quick enough. After planting the seed, I dragged a roller (without any ridges on it) over the drills; this moved about a half inch of earth over the seeds, and pressed them well in. I pulled these turnips in November. (By the way, I always left three turnips in a place, two of them for the flies and one for myself; I choosing the best. These turnips were, many of them, from ten to fourteen pounds weight. You could hardly put one in a man's hat. When I was sixteen, (in England,) my father gave me the care of four oxen, six years old, turned off from the yoke in October, in good working order. I fed them myself with Ruta Bagas and hay, and turned them off to the butcher the following March, averaging fourteen hundred pounds weight each. I preserved my Ruta Bagas by putting them in trenches two feet deep and two and one-half feet wide, on ground sloping and arranged so as to carry all the rain* away from the trenches. They will bear some frost if you do not move them. Horse, ox, cow, pig, and sheep, like them. As to hay I never let my clover go beyond the full head. I make it in cocks as tall as possible, three feet high, with as small a base as possible, leave it out two nights, then, if the weather is fine, open it. I find the handle of my fork becomes clammy, glutinous, from the rich juice of the clover, and I have to wipe it dry in order to handle it comfortably. This hay with a peck of salt to the two-horse wagon load, kept perfectly. After its being in mow a day or two, I take an iron spindle, made for that purpose, about six feet long, as thick as my fore finger, barbed at the point; I run it hori-

* These trenches must have air holes at every three feet—closed by loose straw.

zontally into the mow, and then draw it out after twelve to twenty-four hours. The barbs pull out a sample of the hay from the centre of the mow. I thus judge of the condition of it as to heat, &c. If the color is of a pale yellow, I let it go; but beyond that, I move the mow to another place.

Three men will re-stack thirty loads in a day. In winter I found a strong fragrance coming from the clover. It was green, and the flowers had kept their color, nearly, instead of turning brown. I have followed this practice fifteen years. In England we had a yellow trefoil, which, when in mow, a man cut with his hay knife;—he found his pantaloons covered with an oil from it.

Judge Van Wyck.—We cut clover before we do timothy, generally. I have often noticed the gummy, sticking matter on clover. It forms a sort of paste, and seems to be composed of the juices of the hay and some of the salt used in the mow. In Germany, they cut their grasses while green, and put them into pits in the ground, putting one pound of salt to every hundred pounds of hay. It keeps in the best manner;—cattle are greedy after it, and less of it serves.

Charles Henry Hall.—We have two facts brought out to-day, that are worth more than all the declamation: One, as to clover kept perfectly in its green state; the other, a crop of two hundred bushels of potatoes followed by five hundred bushels of turnips on the same acre, in the same season. Cattle love turnips far better than they do potatoes, and so do pigs; even ducks, geese and fowls love them, chopped small.

Mr. Elliot.—It gives an unpleasant taste to milk.

Chairman.—As to hay, I make it in small cocks. If it should rain, I double them, and sometimes double them again. I made tarpaulins, as I call them, with a cheap paint,—a hole in the middle,—covered the cocks with them. The hay under them remained perfectly green, and kept all its juices.

Mr. Wakeman.—While fruit is coming into our markets, it would be well that a committee should examine, as often as possible, to collect the best specimens, and when deemed proper, to have a wax copy of such as cannot be kept, for our fruit convention. I move such a committee.

Adopted unanimously.

Mr. Wakeman.—There is, at Bergen, a very fine apple called *Gosh Apple*. No one knows where it came from. I move that Charles Henry Hall and Henry Meigs be appointed on the committee.

Adopted unanimously.

The Club then adjourned.

Mr. Meigs read the following translation from the *Annales de la Societe Centrale D'Horticulture De Paris, 1848*. The Viscount Hericart de Thury's Report on the Catalogue of Trees and Fruits of Messrs. Jamin and Durand, of Bourg la Reine, near Paris.

The nursery of Jamin and Durand is, if not the first, certainly among those of the first rank in France, or elsewhere. It is an establishment of the order. Admirable in all respects for fine keeping, perfect culture,—for the severe choice of kinds of fruit,—for the beauty of the trees,—for the excellent disposal of everything in detail as well as a whole.

The fruit trees have come from all quarters, and of every variety. Messrs. J. & D. are in constant intercourse and exchange with numerous foreign and French nurserymen; and they have, by conscientious pains, and serene study, obtained all the varieties which are now considered to be truly of the first quality. They have now in their nursery, different kinds of

Apricots,	23
Cherries,	66
Peaches,	54
Plums, (of which 7 are prunes),	76
Pears, (of which 31 are for preserves),	720
Apples,	206
Grape Vines,	150
Currants,	10
Gooseberries,	60

All other fruits; and they have four hundred kinds of roses.

Van Mons says that the great variety of fruits enjoyed by the Romans were nearly all of foreign origin. They sowed the seeds

of the imported fruit trees for many successive generations, and from time to time obtained a great many varieties, the best of which they multiplied by grafting; so that in the course of ages, the fruits became materially different from those of the several preceding ages.

The gardeners of the Hesperides, and of Semiramis, excited the admiration of the ancients. Dioclesian preferred the garden which he had made at Salona, to the empire of the world.

Epicurus was the first who made a garden in the city of Athens, and he taught (says Pliny,) the art of enjoying the country in the midst of cities.

Among the earliest writers on gardening, in modern times, Quintin is celebrated. He made the vegetable garden at Versailles 180 years ago. His work on fruit trees, printed in 1680, contains excellent things. After him appears Duhamel, of Monceau, styled The Immortal. He gained the glorious title of Father of Agriculture! He was born in Paris, 1700. At 28 years of age, a member of the Royal Academy of Sciences; died at 82 years of age. His treatise on fruit trees is a fundamental work, of absolute necessity, to all those who wish to understand the subject of fruit and its culture.

August 15, 1848.

S. C. HILL, in the Chair; HENRY MEIGS, Secretary.

Mr. Meigs—Mr. I. D. Abbot, who resides at No. 363 Atlantic street, Brooklyn, called this morning and stated that about eight years ago, he took three offsets or suckers from the roots of a plum tree, and set them out at his place. They each had some small roots. At four years they began to bear fruit. His servant has been for some time in the habit of sifting the hard coal ashes of the house about one of these plum trees, without thinking or caring for the tree. The bed of ashes is now about one foot deep, and extends about six feet in every direction from the root of the tree. This tree bears a full crop of perfect fruit, scarcely a single one falling off. The other two trees have not a dozen plums between them.

Dr. James D. Phelps, of No. 309 Mulberry street, exhibited small branches of a hickory tree, which are closely covered with excres-

ences of a perfect bi-valve form, exactly like the round clam. Each, when it becomes as large as a stout cherry pit, opens and liberates a swarm of insects, shaped like a common louse; these in some little time have wings. No member of the Club had ever seen this singular formation. Dr. Phelps has not seen it on any other tree than the single one in question.

Mr. Pike, of New-York.—I have noticed a fruit tree, around which a servant had accumulated a heap of coal ashes, producing remarkable crops of fruit.

Mr. Elliot, of New-Jersey.—I have noticed a pear tree yielding uncommonly well, having ashes of Liverpool coal about its roots.

Mr. Wakeman presented a letter from A. J. Downing, of Newburg, expressing great pleasure in the prospects of the Pomological Convention of the Institute, and tendering his hearty co-operation.

Also, a letter from Aaron Petrie, of Little Falls, giving an account of a disease among cows, similar in many respects to the foot rot in sheep.

Hon. Washington Hunt.—Mr. Wakeman presented a note from him, stating his compliance with the request of the American Institute, to deliver the Anniversary Address at our next Fair in October.

Also, the invitation from the State Agricultural Society, to send delegates to the Fair at Buffalo. That our first Vice President, Shepherd Knapp, has been appointed already; others will be selected. It is an important occasion, and we must send as strong a delegation as we can command.

Judge Tiffany, of Fultonville—Communicates statistics of the manufacture of the town of Johnstown, village of Kingsborough, and Gloversville. They are glove and mitten makers; and imported, in the months of May, June, and July last, four hundred twenty-nine thousand six hundred and fifty-two pounds weight of deer skins for their factories.

Also, a letter from our late worthy President, Mahlon Dickerson offering his services at the next Fair, to the full measure of his ability.

Also, invitation from the Maryland Institute for the Promotion of Mechanic Arts, to their first exhibition of American Manufactures, at Washington Hall, Baltimore, on the 31st of October next. And to their Cattle Show, and of products of the farm, dairy, and garden, on the 9th of November; and their Plowing Matches on the 10th.

Mr. Wakeman.—The subject of the day is one of interest to old and young—but vitally so to the latter. We desire to obtain accurate information in relation to it. We understand from reports that the disease prevailing among cows, acts somewhat like consumption, of a rapid course; that on one farm seventy-five per cent of the cows have died. That these cows are milked as long as possible; then certain agents appear, who buy them and sell them for beef. So that our children drain the last drops from the diseased animal, and we finish by eating its meat. This disease is reported to be infectious, so that those taken sick are immediately removed. When such reports are circulated against them, justice requires that the truth should be known, by means of a thorough investigation.

Dr. T. K. Gardner, from the New-York Academy of Medicine, observed, that he was one of a committee of fifteen to examine and report upon the state, &c., of cows fed on distillery swill, &c. He had made several ante and post mortem examinations of such cows; examined the milk with powerful microscopes; applied chemical tests to it. The result of all the inquiry was, that the committee considered the disease similar to Pneumonia in human beings. The lungs were affected. That it passed into Pleura-Pneumonia. No tuberculous disease was found, and no evidence that it was contagious; and the committee believe that the same disease was found on farms.

The food of the distillery cows was found often so hot that we could hardly bear a finger in it. To remedy this evil, the keepers often open the windows, so that a current of air passes in; also introduce the Croton water into the stalls, so that the cows are chilled by the water about their feet and strong current of air, while they are swallowing their hot swill.

I found on dissection, that although to all appearances a cow was in good condition as to flesh and fat, yet in fact this was not so. The *Omentum*, which in a healthy cow weighs about twenty pounds, is here five or six pounds. There is no fat in the creature. We understand that the cows died suddenly, sometimes even while being

milked; that in one instance a cow died and fell over on the man milking her. The committee believe that the milk of such creatures is unwholesome.

It is said that the dead cows are not sold for beef, but are given to skinners for the hides, &c.

Charles Henry Hall.—This subject is not new to us, but the difficulty is that it is found now on the fields and pastures of the country. I move that a committee be appointed to examine and report upon it. Unwholesome food and hard treatment will injure any animal. Cattle ought to have pure hay and grass. It is inhuman to give them such hot stuff as that distillery swill. The medical committee should examine whether the milk of distillery cows or others kept in the same way, is nourishing or not. I think that the poor child fed on it is rather starved than diseased. Take it to the country and it fattens and thrives. Some say it is the air, but it is more in feeding on rich, nourishing pasture milk. Pure milk is alkaline. The milk of the distilleries will not make butter! I am credibly informed that butchers can be found who buy these cows and sell their meat. I hope that an able committee will be appointed.

Mr. Wakeman seconded the motion.

The Club then unanimously appointed Charles Henry Hall, Col. Lewis Morris, of Westchester; Professor Chilton, Thomas Bell, of Morrisania; and Dr. Alexander H. Stevens.

Charles Henry Hall.—We have no idea of slandering our respectable butchers; our investigations cannot touch such men as they are.

Dr. Gardner.—Our medical committee of fifteen will furnish this special committee with a copy of our report.

Charles Henry Hall.—Our western graziers say that in our markets there is a difference of two or three dollars a hundred in the price of their beef, against the beef of our vicinity, and think it is owing to driving the cattle so far; but not so, it is the taking them from their luxuriant pastures and far driving. Diseases are due to climate in some degree. The small pox in sheep is in parts of Europe, but not here, and we hope we shall never have it here. Our sheep bear heavier fleeces than the sheep of Spain, and their carcasses are heavier and the fleece of equal fineness.

[Assembly No. 244.]

Y

Mr. Meigs read from Youatt, his account of a new cattle disease in England, in 1840-41.

Dr. Gardner.—Butchers say that the western cattle have saggy livers; that they are mottled like sage cheese.

Charles Henry Hall.—What is called milk sickness at the west is a very bad disease in cows. It is doubtless owing to some peculiar food which they get occasionally.

R. B. Brown.—The milk sickness seems to be more general in portions of Indiana, Ohio, and Illinois. Their Legislatures have offered large rewards for a remedy. Indiana has (I think) offered twenty thousand dollars; Illinois ten thousand. The milk of most of these cows has proved to be poisonous. This disease appears only at certain seasons and in certain fields; probably there is some cause in the early spring vegetation, for it disappears when vegetation is in full vigor. Cows taken with it invariably die.

Dr. Gardner.—In the distilleries they say that nearly every cow gets diseased on entering the establishment. They have no exercise, the hoof elongates like the finger nails of Chinese ladies. To cure this they turn the cows out of doors to air and pasture.

Chairman.—Lewis & Johnson's patent box churn is here. The operation of it was then exhibited on sour milk. Butter was produced in about five minutes.

For next meeting.—The Cow Disease continued, and, on motion of Mr. Elliot, the Planting of Wheat.

The Club adjourned.

September 5, 1848.

Mr. DE PEYSTER in the Chair; H. MEIGS, Secretary.

Mr. Meigs read a translation made by him from the *Annales De La Societe Centrale D'Horticulture De Paris, 1848*, which will appear in our next number.

Mr. Wakeman called for the reading of an article in the Edinburgh Advertiser of the 4th of August last. This paper is sent by our worthy and able member, Joseph Cowdin, our Consul at Glasgow, who is prompt in his communications with us as to all those things which concern the action of our Institute. The article was read, and we give extracts:

THE PROCEEDINGS OF THE HIGHLAND AND AGRICULTURAL SOCIETY OF EDINBURGH.

Ten acres were selected and prepared for a Cattle Show, which is held but once in three years. Competitors are invited from England and Ireland. Railroads have rendered the conveyance of stock easy. There were entered on this occasion 352 cattle; 764 sheep; 140 horses; 58 swine; 130 poultry;—total, 1,445. The conveyance by railroad was rendered cheaper by the liberal proprietors of the roads. The entries of the products of dairies were 170; of agricultural implements, 310. The display of cattle was magnificent. The short horned breed of cattle first in the list of premiums; Aryshire next; Fifeshire, then Galloways. A grand dinner,—the president, the Duke of Montrose, in the chair; 500 guests at the table; a ball,—340 ladies and gentlemen, dancing till near morning.

PREMIUMS.

For the best Bull, short-horned,-----	30	sovereigns.
“ “ Ayrshire, -----	20	“
“ “ Galloways, -----	20	“
Polled and Aberdeenshire, best bull breeds,-----	20	“
Best Highland, -----	20	“
Best pair of Oxen,-----	10	“
Fifeshire breed,—best breed,-----	15	“
Best Cow of any breed,-----	15	“

Horses.

Best draught Stallion,-----	30	“
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Sheep.

Leicester, not above 45 months old, best Tup,----	10	“
Cheviot, “ “ “ “ -----	10	“
Black Face, “ “ “ “ -----	10	“
Southdown, “ “ “ “ -----	10	“

Swine.

Best Boar, ----- 5 sovereigns.

Poultry.

Best pair of Turkeys, black breed,-----	3	“
“ Speckled Dorking Fowls,-----	2	“
“ Spangled Hamburg breed,-----	2	“
“ Malay,-----	2	“

Butter.

Best (14 pounds,) ----- 5 “

Cheese.

Best 2 Cheeses,----- 5 “

Agricultural implements, premiums of five down to two sovereigns.

Thirty thousand persons attended this Cattle Show.

Charles Henry Hall.—We owe our thanks to Mr. Cowdin for this as well as other frequent communications of interest. He is, as far as I know, the only American consul who takes the trouble. It is a singular fact, that the Scotch should appear so large in the breed of horses. We now see the beneficial results of the wise and patriotic labor of Sir John Sinclair, and that excellent farmer, Thomas Cope, who, in the year 1793, founded the first Agricultural Society in Scotland. It is a matter of great congratulation to us of New England, with our difficult soils, to find Scotland taking the lead in agriculture.

As to fruits and their propagation, Virgil intimates that the ancients succeeded in grafting different fruits on each other,—as on the plane tree, &c. That is impossible.

At the Fruit Convention on the 10th of October, my venerable friend Mr. Andrew Cursor, of Fordham, will appear with some of his fine fruit. He has budded his trees for some fifty years past. He is in good health at ninety years of age. He lives in the midst of his own rich budded and grafted fruit trees.

An American farmer raises some of everything,—he will not place his dependence on a single root or plant. We have such a va-

riety, that even under this hot sun of two months' baking the ground, our subsistence is secure. The Irish do not love our Indian corn.

My friend Mr. Cursor has a pear which he calls Columbia, (too modest to give it his own name,) which he will present to the Fruit Convention. He has sold them, occasionally, for a shilling apiece. His Spice Sweeting Apple is a delicious one. His Red Apple, of a sub-acid flavor, is also excellent. He has raised for the market, more than half a century. He breaks his own horses and oxen, and makes his own cider, and is still a hardy man.

Mr. Wakeman presented a letter from Sydney Weller, of Brinckleyville, Halifax county, North Carolina, on the subject of the vineyard, urging their extension, and the making wine, and thereby retaining millions of dollars which now go abroad for wines.

Longworth, of Cincinnati, says the grape crop succeeds well one year in four. But our Scuppernong grape is as sure a crop as any we have. I propose to give to your Institute a treatise on vineyard culture, if you approve of it. I shall try to send a box of my grapes and my vines to your Convention on the 10th of October. I have not failed in making my wines these twenty years. This year I make from fifty to sixty barrels of improved wine.

Charles Henry Hall.—I move thanks to Mr. Weller.

Judge Van Wyck.—I second.

Carried unanimously.

Charles Henry Hall.—There is a considerable difference of latitudes between North Carolina and Ohio; and great difference appears in wines, at little difference of soil, location, &c. Longworth, of Cincinnati, has produced Hook wine which is not excelled by Europe.

Mr. Kelsey exhibited a mill-stone of his patent. It is formed of Rosendale hydraulic cement with flint and burr stones.

Judge Van Wyck.—Mr. Weller mentions the failure, to some extent, of three out of four crops of Isabella and Catawba grapes; and in Europe they ordinarily fail in their grapes one crop in five.

Chairman.—Our regular subjects,—the Cow Disease, and Wheat Sowing,—are now in order.

Mr. Elliott, of New Jersey.—I wish to say, that we should precede the wheat sowing, by free conversation on the subject. The general plan in Europe, and here, of plowing in tillage crops, is strongly advocated. I have sown Indian corn broad-cast—let it reach seven feet in height, and I have then plowed it all under, so that none of it was seen above ground. This corn was sowed in June and plowed under about the middle of August. I have a difficulty in this plowing; it does not leave crevices sufficient to let in the grain; the furrow is flat, and about twelve inches wide.

Unless we sow wheat early, it is apt, for want of sufficient root, to be frost-heaved in spring. My early planted wheat grows so well, like a grass, that it in a good measure keeps off the frost.

In England, I used a roller called a presser, which makes drills of an inverted conical form; these receive the seed, and the presser covers it about two inches deep.

In Jersey, sow wheat no later than 1st to 15th September;—by no means later on any poor land. On rich land, you may sow ten days later.

Mr. Meigs.—How do you prepare your wheat for sowing?

Mr. Elliott.—By taking half a puncheon, filling it nearly with brine that bears an egg; take a wicker bushel basket, put in the seed wheat, then sink it gradually in the brine till full; stir the seed, that all lighter matters may rise to the surface; take off all this, and continue to stir the seed until no scum appears. The smut balls, &c. &c., are all out; then take the basket, let it drain, then spread the wheat and sift powdered slaked lime over it, enough to enroll every grain; the beard of the wheat, which carries the smut, is destroyed by the lime, so that now I have pure wheat. My father had a smutty farm; he tried this plan, and for twenty-six years, he always had pure wheat. I have tried it thirty-five years, with the same success. Before my father tried it, the millers would not buy the wheat from his farm.

Mr. Meigs.—I wish to know what time you cut your wheat?

Mr. Elliott.—My father used to let his get ripe, but afterwards he became a convert to the new system of cutting earlier. I cut about six days before ripe. I leave it for some time in stacks in the field. I take 12 sheaves, place 10 of them in a conical form, then unbind the two sheaves and place their heads down over the top of the cone,—tie the top tight and pass bands around the lower end near the heads to keep them in place. I often let these stacks stay out a month. My grain after threshing, (although cut green,) is full, fine and glossy. I sow the bearded brown wheat, common in New Jersey. It is not so good for the millers, who prefer the white bald wheat, which meals down softer than the other, and millers profit more by it. My father used to have forty to forty-five bushels an acre in England. Once we had fifty-one bushels an acre. The most I get in Jersey is little over thirty bushels an acre.

Charles Henry Hall.—The remarks of Mr. Elliott are important. This sowing wheat in drills, covering the seed two inches deep, agrees precisely with the experiments recently tried by the Institute of France, which demonstrated that depth, two inches, of planting wheat to be the most abundant in crop.

Judge Van Wyck.—And his use of brine and lime, is also valuable in protection from insects. I have seen as fine crops of wheat as ever came under my view, where the seed was merely harrowed in, this, however, was in favorable summers.

Mr. Meigs.—Mr. Disosway of Staten Island, has received for the Institute, from Chief Justice Benedict of Liberia, Coffee, and the Palm plant, which furnishes the celebrated oil of commerce. These articles will be for the Convention of Fruit Growers at Judson's Hotel, 61 Broadway, on the 10th of October, when and where the members will have the first taste of Liberian sugar.

Wm. R. Prince of Flushing, writes, urging the establishment of a Pomological garden, under the patronage of the American Institute. He says "France has her Jardin des plants. England her Horticultural Garden at Chiswick, and it is full time that we had one for the developement of all the riches of Ceres and Pomona, which our noble country presents in such abundance. We should stand before the world a leader, and an example to other nations of the earth in this respect, as we already do in the most honorable and enlightened pursuits which can add dignity, comfort and happiness to man."

Mr. Wakeman read a letter from A. J. Downing, of Albany, recommending strongly the objects of our pomological convention, and Mr. Downing, who is justly celebrated for his science and taste, says that he has this subject at heart, and is endeavoring to awaken public attention to it.

● Mr. Wakeman.—The members of the Club will look at the cheap and convenient implement of Mr. Harkness of Michigan. It costs five dollars and taking up the grain from the swathe, so that it loses little if any seed, and it is so convenient for binding, that it is believed to be worth one hand in the field.

Mr. Quackenbush.—It saves full half the labor I think.

John D. Ward of Jersey City, presented a specimen of his Isabella grapes, which were tasted and relished by the Club.

Subjects for next meeting, Cow Disease and Sowing Wheat, continued.

The Club Adjourned.

Sept. 19, 1848.

TIMOTHY WOODRUFF, in the Chair. H. MEIGS, Secretary.

Mr. Meigs stated that he visited the works of Alfred Hall at Perth Amboy, on the morning of the 14th of September, instant, and examined some sugar maple trees. Mr. Hall said that the trees which are about three inches in diameter at their bases, and are about eleven feet high, were set out last May, (all their branches and the tops being cut off,) in holes of six feet diameter and $2\frac{1}{2}$ feet deep. A mixture of the native hard pan, of surface soil from an old cultivated field, and of salt muck pulverized each one-third—adding to the mixture, for each tree, one peck of unslaked shell lime, well mixed in. This compost he pressed down about the roots quite hard, to keep the roots firm against winds. After the Fourth of July, there was no rain worth notice, and the grounds having become remarkably dry,—he on the first of Sept. spread salt muck about six inches deep and six feet in diameter about each tree. The

site of the trees is on the summit of a hill near the shore,—about forty-five feet high,—very barren. On the 14th of September these trees had fresh vigorous leaves. On examining the muck about them, it was found to be quite moist at four inches depth from the surface. This result is attributed to the salt contained in the muck.

Dr. Gardner read his essay upon the subject of the prevalent Cow Disease.

New-York, 151 Wooster street, Sept. 16th, 1848.

T. B. WAKEMAN, Esq, Secretary of the American Institute.

Dear Sir:—Since the meeting of the Farmers' Club at which the subject of the prevalent disease in cattle was discussed, through the politeness of Charles Partridge, Esq., Eleventh street, I have had the opportunity of exercising and treating one of these diseased animals, and I proposed to give you a brief account of this single case, and also in continuation, some ideas upon the subject mainly extracted from a very able French work—the property of the Institute and “one of the Vattemare books.” I regret that they cannot be more complete, but as by a by-law of the Institute I was prevented taking the book to my own house, I have not been able to abstract sufficient time from professional engagements, to devote to its study. I have also wanted the books of reference necessary to its proper comprehension, while engaged in its perusal in the library of the Institute. I trust I may be allowed these apologies for the imperfections in this hasty letter.

On Friday eve, September 8th, I first saw the cow of Mr. Partridge in the stable in Eleventh st. This gentleman had paid \$50 for her a few weeks previously. Since then until three weeks ago, she gave daily 18 quarts of milk. At that time she was taken ill with cough, refused to eat her food. She had been kept on hay and cut-feed. Very soon she was seized with a severe diarrhœa, her fœces being not only unusually liquid but the hay seemed to pass through the intestines little changed by the digestive organs. Her milk was speedily dried up.

When I saw her on the 8th, she was in nearly the above described condition. She had been seen by some of the “knowing ones” and described as being “like all the rest.” Some spices had slightly allayed the diarrhœa. She was very much emaciated and ate but little hay, grass or meal, all of which were offered to her. The pulse was about 70 and very soft, showing no signs of active inflammation.

On examining the lungs by the ear, no sound of respiration was heard in the greater part of the left, and in a somewhat less portion of the right. The respiration of the animal was labored, not unfrequently accompanied by a groan. In short, the examination rendered it evident to me, that the animal was laboring under a disease called pneumonia, commonly known as lung-fever in mankind; which is an inflammation of the substance of the lungs, that both lungs were seriously affected, the left the most so; and that they were in that stage of the disease called Hepatization of the lung.

Pneumonia or Lung Fever is a disease of several stages. The first is that of inflammation. The blood is then driven into the lungs, or a portion of them, according to the extent of the disease. This constitutes the active part of the disease. If this congested lung was then punctured, the blood would flow freely from it, hence the utility of bloodletting in this stage. In the next stage, the lung is said to be hepatized, that is, the blood which filled the lung to repletion, remaining unmoved, has clotted, and the organ is then firm, resembling the liver in texture, not collapsing on exposure to the air or upon pressure by the hand. Cutting the lung in this state, the blood would not flow out. This stage is called that of "red hepatization." The third stage varies. Either the lung recovers its natural state by the slow absorption of the effused blood, the red particles first forming what is called the state of "yellow hepatization"—and subsequently return to health; or the disease advances. The substance of the lung is then changed to pus, or matter as it is commonly denominated, forming the state of "diffused suppuration." It is from persons recovering from this stage of pneumonia, that the report arises of the curability of consumption, a disease totally different from that which we are considering both in its origin and results. Pneumonia is a curable disease in all its stages. Consumption can be retarded but never eradicated.

All these various stages can be determined with most absolute certainty by the ear, and in mankind each of these stages is curable. The action of medicines upon animals is very uncertain. Advanced diseases are therefore most always fatal among them.

A full bleeding, the blood being allowed to flow quickly, from a large orifice, perhaps even until the animal drops, followed by a saline cathartic will most generally arrest the disease in the first stage. This treatment was last year unavailing in the cow stables attached to the distilleries, on account of the broken constitutions of these denaturalized animals.

In the second stage bleeding would be injurious. It would not arrest the disease, and it would weaken the patient. In mankind, a set of medicines called absorbents, will cause the effused blood to be taken up and removed from the lungs. No such medicines are known in Veterinary practice &c. All that can be done, is to resort to the "adjuvants" used in this disease when treating mankind, viz: local bleeding by cups, or scarification, external irritation by blisters, rowelling setoning, &c. These, if the constitution be strong and the disease not too extensive, or far advanced, is sometimes efficacious.

The third stage in man is treated by stimulants and tonics. Here again the veterinary pharmacopœia is deficient.

Mr. Partridge's cow, was, as I have said, in the second stage and far advanced. He had not the slightest doubt but that she would die and he kindly gave me permission to treat her. Not finding veterinary prescriptions which seemed to me suitable to her case, I considered her as a large human being, that is, I gave her the same medicines that I would a human being in larger quantities, viz:

Calomel 1 drachm,

Tartar Emetic,

Powdered opium, each one scruple,

made them into a bolus and gave one-sixth three times a day, and in addition her sides, over lungs, were freely rubbed with a strong tincture of Spanish flies. This was done on Saturday afternoon. The treatment had little if any apparent effect. On Tuesday night her breathing was so labored that the noise kept the neighborhood awake. On Wednesday she was evidently in great distress, and Mr. P. ordered her to be killed. Being very much occupied I did not see the animal after Sunday. I have been informed, however, that when knocked on the head, a large quantity, "about a pail full of matter" ran from her mouth. This shows that the disease had reached the third stage, that of suppuration. I would have been very glad to have made a post mortem examination, but by an accident did not hear of her death till several days after.

I trust that I may be excused the lengthy report of this case, but as it is in my opinion a type of the disease in the country known as distemper, fever, consumption, &c. now prevalent, I have deemed it proper to omit nothing of the above.

I will now give you a synopsis, as briefly as possible, of the work above alluded to, which is entitled "Traite, Sur la Maladie de Poitrine"

du Gros Betail connue Sur le nom de Peripneumonia Contagieuse, par O. Delafond, Professeur de Pathologie. de therapeutique, de police Sanitaire, de medicine legale et de chirurgie pratique a l'ecole royale Veterinaire d'Alfort, &c., Paris France, 1844." From the distinguished reputation of the writer, at the head of the finest Veterinary school in Europe, from his great experience and remarkable opportunities for observation, his opinions if not conclusive, are at least of very great value.

In the preface he states that this disease, after typhus, and what he styles "les maladies charboneuses," is the most serious known; that it is rarely sporadic, often local, sometimes general, *always contagious*; that it is not one of the class of great diseases which appear occasionally, and which are of a limited duration, but it thows itself annually in certain places *where it is produced by local causes*. At the present time (1844) this disease affects the cattle of nearly every country in Europe and in a great number of the departments of France, producing greater or less mortality. For the last 16 years, he has specially attended to this disease, going into every part of France where the animals are raised, fatted, and where they are kept for milk.

There are various opinions in regard to the contagiousness of this disease, but Mr. Delafond has arrived at the conclusion, after much study, that it is highly so, and the French government so considering it have passed numerous sanatory decrees regulating the treatment and use of animals, thus diseased. The kingdoms of Hanover, Wurtemberg, Sardinia, and Switzerland have adopted similar regulations.

This disease is variously styed "putrefaction des poumons" by the Germans, "new disease" by the English, pneumonia, by the Hollanders and French.

Our author in his zeal has gone back to the year 354 A. C., and found this same affection described by Aristotle, and from that period he traces it down, through various countries, till our own day. In many places it is never known, and that it never spreads unless by contagion. "The seat of pneumonia is now well known. The bronchia, the pulmonary tissue, the interlobular cellular tissue, the pleura are the organs attacked either simultaneously or separately by this malady. Opinions differ upon the character of the disease. * * * As for myself, I consider pneumonia as a specific disease, because it gives birth to a peculiar virus, susceptible of reproduction, a characteristic which distinguishes it from ordinary and sporadic pneumonia; that it exists sometimes in the lungs, sometimes in the

pleura, but oftener in both; that its nature is inflammatory, acute or chronic, simple or complicated with a putrefied alteration (alteration septique) of the blood, or with intestinal inflammations, but that is not necessarily, either putrid, gangrenous or pestilential. In short. that the morbid element which gives birth to the virus seems to be an alteration of the lung, and that the vehicle of this virus is the exposed air.

When this disease attacks a herd of cattle, a single animal is first seized, from 8 to 15 days subsequently one or two more, then immediately five or six at a time, after a period it commences to relent, appearing only from time to time and finally disappears. The number of beasts attacked and the mortality depend upon the season and the climate. Every thing else equal, more animals are attacked and the disease is deadlier when the food is particularly abundant and nutritious. It is also particularly abundant when famine obliges the farmer to feed poor nutriment. Changes of temperature have a peculiar effect. Its duration in a stable is from a month to several years. It attacks particularly adult and old cattle, rarely the young. Especially it affects the full blooded young, the fine milking cows and fatted cattle. Stable cattle when attacked, though the disease is more gradual in its march, the result is as fearful.

The disease may be acute or chronic. The attack when acute is as follows: When pneumonia attacks a horned animal, it continues to eat, drink and ruminate; if a cow she gives milk as usual. In the eyes of the farmer the animal is not sick. If however the surgeon attentively examines the animal, he finds the mucous lining of the eyes injected and red, the respiration frequent, (25 to 30 a minute,) the pulse accelerated, (50 or 60;) and auscultation makes known in one or both lungs, either behind the shoulder or in the upper or lower part of the chest a light sound of breathing or rubbing similar to that produced by breathing through a glass tube this sound is owing to the passage of the air through the bronchial tubes. *It always announces the commencement of the disease.* * * * Percussion on the pectoral walls shows sensibility. * * * The animal coughs frequently, and the cough is dry and slight, often unfinished, rarely sonorous and full. Not unusually the cow frequently desires the bull; as for the rest she appears to be well, she capers about when going out of the stable, either to drink or to go to the pasture, and I repeat in the eyes of the raisers, who judge only by the exterior, she is not sick.

In this state she rests 3 or 4 days, but in this lapse of time the pneumonia appears, announced by a crowd of symptoms, which to the raiser indicates the first appearance of the disease, but for the veterinary surgeon is the second period.

I will stop here for the present. If you think that any information of value may be given to the Farmers' Club and the community by a continuance of this synopsis, I shall be happy to continue it from time to time.

Respectfully I remain yours, &c.

AUGUSTUS K. GARDNER.

Mr. Nottbeck.—I remember that the same disease has appeared in Russia, with the addition of certain spots on the skin.

Judge Van Wyck thought that Dr. Gardner's treatise was a very important one. The disease is probably in Westchester, according to the indications just given of its action, by Dr. G. It seems to be pneumonia, lung disease. Little is known of its cause.

Dr. Gardner.—It is contagious like small pox, and like that more or less in existence. At the next meeting I intend to speak of its cure, and in reference to the milk and meat of the cattle having this disease.

The thanks of the Club were unanimously voted to the author of the communication.

Dr. Gardner.—In our system of instruction these should require veterinary study from three to five years.

Judge Van Wyck.—As much study and skill are requisite as in human diseases. The whole community has a deep interest in the health and lives of our animals.

Mr. Antonides of Brooklyn, presented grapes from his garden. Isabella and French grape, much like the Muscatel, both were found to be very sweet and fine.

Judge Van Wyck.—I wish to correct an error in the last report of the Club. In speaking of sowing wheat, I said that the prosperity of the crop depended upon the weather of the winter and spring, not on the summer so much. There is nothing like a good snow on it.

Same subject to be continued.

The Club adjourned.

January 2, 1849.

R. T. UNDERHILL, of Croton Point, in the Chair.

Mr. Meigs presented and read the following translations made by him from the latest periodicals and other papers received at the Institute.

REVUE HORTICOLE. Paris, September. 1848.

Grafting Strawberries in Rose Bushes.

M. Coquillard, gardener of Mr. James Rothschild, has *grafted by approach*, the runners of strawberries on eglantine and monthly roses. Many specimens of this kind of grafting were in the last exhibition of the Horticultural Society, and we have also seen them at a flower dealers' in the *Boulevard des Italiens*. These grafts attract great attention from the promenaders of that quarter, who behold bunches of strawberries upon rose bushes and eglantine, and are quite astonished at the phenomenon. But such graftings are not new. We have seen the tomato grafted on the potato—the artichoke upon the teazle—tobacco on the mullen, (Bouillon blanc) the melon on the cucumber, &c., are plants of the same family, as well as the rose and strawberry, but these ill assorted unions are of short duration, after some weeks of this common life, each separates from the other, leaving a deep and often mortal wound.

The following is the method pursued by M. Couquillard, viz: He plants in pots, in autumn, his eglantine and roses, and at the foot of them, monthly strawberries. In the spring, when the strawberries are grown, he chooses the best of them, and grafts by incision, the buds of the strawberries, in the eglantine and rose bushes.

ANNALES DE LA SOCIETE CENTRALE D'HORTICULTURE DE FRANCE.
Paris, August, 1848.

Report on a Treatise upon the Fuchsia by Felix Porchier, by Mons. Bousnere, Secretary of the Society.

I present to you an analysis of this Treatise upon the Fuchsia, its origin and its culture. The work is preceded by an introduction, and terminates with an account of the species and varieties of Fuchsia, its name and its synonyms, a table of the varieties of the first and second order, and finally by a list of the principal gardeners who cultivate it in France. The incessant progress, the rapid metamorphoses of this flower, are due to the introduction of new bo-

tanical species, to the hybridation of these with the first hybrids obtained, and above all to the powers of variability which the *Fuchsia* possesses. The producers of these, both French and English, have profited by favorable circumstances. By hybridizing and planting, they have brought out new varieties. The author distinguishes the three new botanical species introduced into France since 1844, and which according to his view will be very useful for hybridation. These are, *Fuchsia serratifolia*, *macrantha*, and *montana*. He gives interesting details of the origin, discovery, and introduction into England and France. Mons. Miellez, of Lille; and Mons. Salter, of Versailles, are distinguished in its culture. The most beautiful *Fuchsias* of this day, are due to Mons. Miellez. The *Fuchsia Napoleon*, was derived from twelve hundred seeds, of which only five were of the first order.

The first species of *Fuchsia* was discovered by Father Plumier, a religious minim, about the end of the seventeenth century; at the time that learned botanist went the fourth time to America for the purpose of examining the tree which produced the *Quinquina*, (Jesuit's Bark.) Father Plumier was the discoverer of this genus of flowers, and dedicated it to Fuchs, the Bavarian botanist, who, in 1703, published a botanical work under the title of *Nova Plantarum Americanarum Genera*, in which, for the first time, mention is made of the genus *Fuchsia*, which then comprehended but a single species, the one discovered by Father Plumier, viz: *Fuchsia triphylla flore coccinea*. Since that period, botanists, travellers, and horticulturists, and zealous collectors, have successively enriched and augmented the beautiful species of *Fuchsia*. Standish, De Candolle, Dr. Dietrich, Miers, Hartweg, Ruiz, and Pavon, Harrison, Smith of Dalton, May, Miellez, Salter, and Audot.

The Treatise contains instructions for the culture of the plant, how to obtain fine seeds, &c., &c. The best composition of soils for the plants, and the most suitable seasons and modes of planting and growing, of budding and grafting them. *Fuchsia* is easily multiplied by budding—much use has not yet been made of grafting. Delicate varieties must be grafted on vigorous ones, and many varieties on the same plant, producing that mixture of flowers of diverse form and colors, which is practiced in Belgium on the *Azaleas*.

The varieties already produced, amount to five hundred and forty-one, all accurately described. The world will read with pleasure

Mons. Porcher's Treatise on the Fuchsia. He has done for that beautiful flower, what Mons. Berlese has done for the Camellia.

THE NATIVE GRAPE.

Mr. Alanson Nash presented and read the following paper on this subject, relative to the vines of the Connecticut valley and of the South:

Many parts of our country abound with the native or indigenous grapes, which when cultivated, are superior to the foreign varieties.

The native grape seems better adapted to the American climate, and physical state and condition of the soil and atmosphere, than the exotic or foreign species.

Our native vines are more hardy and prolific, the culture being equal, than any that I have ever seen of the foreign stock.

We might as soon expect to witness the sugar maple, from the Green Mountains, thrive on the sunny plains of Sicily, as to see grape vines from that island flourish when transplanted to the severe and snowy climate of New England.

Obey the law of nature, is a command no less enjoined upon us in the physical than in the moral world.

Almost every latitude and longitude of our globe has a system of vegetable economy more or less peculiar to itself, and it is a vain or idle undertaking to bring plants, trees or vines, from a foreign climate and set them down by the side of the native growth, and expect to see them thrive equal to those indigenous to our American soil.

We are certainly in an error when we bring grape vines from other countries and cultivate them here to the neglect of our own native grapes, which so abundantly are found in our forests. Far less culture of the native vines would produce a better or equal yield of fruit than can be obtained from the exotics.

Besides many cases come yearly to our knowledge, of a total failure of fruit from vines which have been transported from foreign soils to our own.

Perhaps no part of the United States is more prolific in variety and excellence of kind of the native grape, than the valley of the Connecticut river.

Beginning at the town of Guilford, on Long Island Sound, and then passing north to the valley of Connecticut river, and up that valley to Vermont and New Hampshire, we find the native grape growing in great abundance in the forests.

Indeed, the climate and soil of this region seem peculiarly congenial to the grape vine. In the town of Guilford are found many localities of the native vines growing on trees or in clefts of rocks, in forests or by road sides, or in open fields, and also by runs or streams of water. Many of the vines in this part of the country seem to seek moist soils for their locations. There are several varieties, but most of the native grapes of the Connecticut valley appear to ripen from the 25th of September to sometime in October, and perhaps in some cases later.

So prolific are the vines with fruit, that when the season arrives it is as common an occurrence for boys to take a basket on their arms and go out a graping, as it is to go after blackberries.

There are several varieties of grapes growing wild in this region of country, which have not yet received their names from horticulturists.

In the year 1847, late in September, Mrs. Nash, while on a visit to Guilford to see some friends, purchased a half a bushel of the native grapes found growing in that town, and brought them to New-York and made the fruit into grape jelly. The grapes were obtained from boys who had been out graping, and then carried about the fruit to sell. Many dozens of bushels are picked yearly in that town, and sold for eating and to make into jelly or preserves.

These grapes grew in the forests on vines that run on high bushes and trees, and were picked before the fruit had become fully ripe, as it is believed to be better in this state for manufacturing preserves or jelly, than when fully ripe.

The berries of these grapes were of a large size, and equal to those of a basket of Isabella grapes which I purchased the year

previous to 1846, at Washington market, grown in a vineyard, and cultivated in Westchester county, in this state.

The grapes from Guilford, though uncultivated and grown on the native vines, were abundant with pulp and juice. Their flavor when preserved was the same as those cultivated, and no one not acquainted with the circumstances of the growth of each kind, would have suspected a difference. We remember that many years since, while pursuing academical studies at Amherst, Massachusetts, in company with some fellow students late in September, by the side of a stream, we came across a native grape vine in our rambles through the fields in the eastern part of Amherst, near the town of Pelham.

This vine grew from the stump of a decayed sugar maple tree, and run up over a large bush of basswood. The vine was literally matted with clusters of ripe fruit. We regaled ourselves upon it to our content, deeming wild grapes to be the property of the first finders! but we left a goodly quantity on the vine for the next comers. The grapes were of a delicious flavor, full of saccharine juice, and some of the berries appeared to be as large as the black Hamburg grape. I am persuaded that the fruit of this vine had it been cultivated, would have equalled any that is found in the best vineyards of the present day. I will call this variety of grape the Hockanum grape.

The massacre of Capt. Lathrop and seventy-six of his men at a place called Bloody Brook, in South Deerfield, Massachusetts, Sept. 18th, 1675 old style, was occasioned by the soldiers being attacked by the Indians, 700 in number, while the captain and most of his company were aloft in a forest picking grapes from the native vines which abound at that locality. The men, most of them, had climbed on to the vines, leaving their arms on the ground. The Indians lay in ambuscade not far distant; seeing the helpless condition of the company for a fight, rushed upon the white people, seized their arms, and 76 out of 87 men, which was the number of Capt. Lathrop's company, were killed and scalped by the Indians.

In the eastern part of the state of North Carolina, at the mouth of the Albemarle sound is found the Scuppernong grape. It is a native or indigenous fruit, and is and was found growing in the forest on Roanoke Island and its vicinity, when the English first visited the country under Sir Walter Raleigh.

The Scuppernong creek is a small sluggish stream which runs into the Albemarle sound on its south side, from a large Pocosin or open swampy region and within a few miles of the Atlantic Ocean.

In the Albemarle sound, opposite to this creek is a small island, surrounded by tide water and formed from a sandy marine soil. On this island are also grape vines which were in full growth and size, when Sir Walter Raleigh first visited the country, then inhabited by the native Indians. The vines on this island bear a white fruit, round, very sweet and large size, and the vine has continued to bear since it was first discovered. Indeed no one knows the age of this vine.

The vine has been run across the island in different directions, and I was told when in the neighborhood, some years since, that the vines leading from the original parent stock, had stretched across nine acres of land from tree to tree.

The Indian name of the creek was Scuppernong, and hence the name of this variety of native grape.

The Scuppernong grape in its native soil in North Carolina yields large quantities of fruit and of a high saccharine quality. I was told that one season near 27 barrels of wine were made from the original grape vine on the island near Scuppernong creek.

The wine made from this grape is highly esteemed in North Carolina; I drank some of it at the town of Charlotte in the southwestern part of the state, full three hundred miles across the country from where the grapes were grown. It was of a delicious quality, though imperfectly manufactured.

The geological features of the soil where the Scuppernong vine grows in North Carolina is the same as the soil at Sandy Hook, and the belt of sea sand that has risen up along the south and eastern sides of Long Island. The same formation exists on the Carolina coast, including the Capes Hatteras, Lookout and Fear, and those of Virginia. There are no less than five varieties of grapes found about Albemarle sound, all of which are called Scuppernong grapes, to wit: black, green, purple, red and white; but the white grape is the only kind properly called Scuppernong grape. The other colors are native grapes of a different species.

While on the subject of native fruit, permit me to mention a variety of native or indigenous plum which grows at Hatfield, Mass., on the banks of the Connecticut river. This tree bears a small red fruit, and in its wild state as it appears in the forest is acid. The tree is sought for as a stock in grafting.

The white and blue gage and egg plum when grafted on this stock grow luxuriantly and seem to acquire a hardiness to resist frost and cold which these varieties of plum do not possess when cultivated in gardens.

My brother in Hampshire county, Mass. procured one of these trees of the native plum and set it in his garden.

The next season after, he grafted a scion of the egg plum on the native stock. The graft had grown full five feet when I saw it in September last. This was the growth of one season.

Dr. Underhill made some remarks on the Isabella grape, when several interrogatories were addressed to him in a conversational manner by several members; and by that means the following valuable information relative to the culture of the grape was elicited from Dr. Underhill, who, we should observe, is probably the most extensive and successful culturist of the grape in this country. Anything coming from him on this subject is the result of enlightened experience, and is, therefore, entitled to the highest consideration.

Dr. Underhill in speaking of the improvement of the Isabella grape, said that it would now do about as well in the worst year as it would in the best year ten or fifteen years ago. The soil for this vine required two things, first that it should be dry; second, free from clay, or have but little clay; a sandy loam was good, the sand from slate or granite rocks. Prune from 1st March to middle of April. Plant from 1st April to 1st July, or even the middle July. He recommended deep plowing and deep manuring. The plants should be taken up in April before the buds start, and if not at once put in the ground, the roots should be trenched in the cold ground at the side of a wall or other cold place. The object of this was to prevent growth. It would be well to cover them with ice or put them in an ice-house. He had taken vines from the nursery, with large leaves on, and planted them, and they did well, though it was done at great risk. Vines four or five years old would bear some the first year, and very well

in the second. Younger vines seldom bore until the second year. In the spring of the second year, after planting, he set out posts from 5 to 7 feet above the ground, and about 12 feet apart. The rows or posts were from 6 to 7 feet apart. In each post he drove three nails two feet apart, and around the heads of these nails wound wire of the size of from 11 to 13, making three lines. He then took the branches, six branches to a vine, and stretched them out on to the wires, which would not be covered with the vines under three or four years. He had dipped the wires in tar made of bituminous coal, but deemed it unnecessary, as his did not rust much, and he thought they would last fifty years. He had planted his vines facing all directions, and could see no difference in the result. He had pressed out a pipe or two of wine, but had not given much attention to wine making.

The difficulty in making wine in this country was the want of good cellars. We wanted deep cellars in the north side of hills as they had in Germany and Spain, where it was cold. The difficulty in making wine was in the first summer, when it could not well be prevented from fermentation without such a cellar. But if kept through the first summer, then the danger was all over.

Our grapes, says Dr. Underhill, will make wines resembling the Rhenish wines. He had been informed by intelligent Germans, conversant with the subject, that our grapes were better for wine than the German grapes, as they contained more saccharine matter, consequently we could make wines resembling those of the south of France. Dr. Underhill also spoke of the Isabella and Catawba, as susceptible of producing the best kinds of hock and champagne.

Mr. Holmes, of this city, said that he had in his yard, in Broome street, in this city, a Scuppernong vine that he procured in Savannah, in 1826, which bore from two to five bushels every year. Its trunk was now some six inches in diameter. He had put down some French vines, but they lived only four or five years; but his Catawbas, planted seven years since, has done well. He had some wine of Scuppernong grapes, made in 1826, and he would bring some to the Club at the next meeting.

Dr. Underhill said that the Scuppernong vine had generally failed at the North, though it originally came from the same place as the Isabella. He understood the cause of the failure to be this: In the Isabella and Catawba, the male and female principal are on the same vine; while in the Scuppernong, they are on different vines; and as

the female bore the fruit, this sex alone had generally been transplanted;—hence the failure.

Mr. Chandler asked the chairman, Dr. Underhill, if he had ever known good wine made of the Scuppernong grape?

Dr. Underhill replied that he had, ten or twelve years ago, tasted some that was good.

Mr. Chandler said that specimens of Scuppernong wine had been sent to the fair for many years, but never but once has there been anything that deserved even the name of wine, and in that one instance, it could with difficulty pass for poor wine.

Mr. Walden said we know little of wine in this country. It is a purely manufactured article. As a merchant, he had imported a great deal of it. He did, once, import some of the pure juice of the Madeira, and it was a miserable article,—purple, pulpy, and insipid. It is, as well as brandy, an entirely made-up article, in Spain and France. They make brandy for the Russian market, entirely white; for us, it must be colored. He had, he said, received many times, specimens of different colors and flavors, both of wine and brandy, from the manufacturer, who wished to know what particular variety best suited our market. Good champagne, he said, could be made from cider.

Dr. Underhill said, after twenty years' experience, he had not known a single instance of success in foreign vines for vineyards and gardens, without the protection of glass. He had never known them to live over four or five years, in any part of the country. In regard to native grapes, there were none like the Isabella, and that owed its superiority to some fifteen years of cultivation.

Judge Van Wyck.—What think you of the capacity of the native grape of Connecticut valley, &c., to make wine? Will they do as well as Isabella and Catawba?

Dr. Underhill.—They will make wine now,—and after cultivation, still better.

Mr. Nash.—I am satisfied that Scuppernong grape will not thrive away from its present peculiar situation, growing in the vent bed of sand and shells hove up by the waves,—and free from frost and snow,

—opposite to our stormy Cape Hatteras, where the climates seem to meet. I believe that the Connecticut valley grape is an Isabella.

THE ALPACA.

Mr. Pell reported that the New York Agricultural Association had sent funds to South America, and that several of these animals might be expected to arrive within a few months.

TEA.

Junius Smith, of Astoria, returned from London in October last, with several hundred tea plants, which he is placing in such locations in our country as are most favorable to them. He justly deems it best to select several locations of some difference of soil, elevation, &c., so that his experiment to establish the tea plant in our country, may have all chances of success.

It is considered that China, the mother land of tea, and the United States, are very similarly situated in reference to their respective continents and latitudes. They are both eastern countries of the continent, and their latitudes about the same;—they are of course visited by like winds. Their westerly breezes, passing vast bodies of land, are usually dry; while their eastern gales, moistened by the oceans over which they pass to the shores of China and the United States, constitute a common similitude which doubtless may be fairly argued in favor of the success of tea in the United States. And what is true of Brazil, the eastern land of South America, where tea is somewhat established, is doubtless more likely to prove so in the United States, whose position so perfectly resembles China. Mr. Smith wisely destines all his plants to the production of seeds, which he proposes to plant, until there shall be plants enough to commence the picking of the leaves for *tea*.

Mr. Meigs.—The tea plant in China is grown in rows about five feet apart, perfectly cultivated. The plants are, by pruning, kept at a convenient height for the gathering of the leaves. The seed is remarkably difficult of growth. The Chinese plant seven or eight seeds in one *hill*, in order to secure the growth of one plant. The plant, at three years old, yields abundant flowers, very like the flowers of our wild rose or eglantine. These flowers end in a pod which contains, generally, three *white seeds*, of the size of small hazel nuts, which the Chinese plant soon after they are ripe.

Mr. Smith's plan of using his plants for the production of tea seeds, and the planting of these *a la mode a Chinois*, is doubtless the work of wisdom.

Merbel, in 1813, founded an order of the *Ternstromiaceæ*, by the name of *Thead*. Decandolle and others adopted it substantially. Since then, M. Cambessedes has presented views of it, now generally adopted.

The *Camellia* is a type of the group. Royal has given good illustrations of the *Theads*. Two or three species only, furnish the tea for commerce.

One property of the *Camellia oleifera*, is for its seeds to yield excellent oil for the table. Tea is narcotic in very hot latitudes, as at Penang.

Seeds of the *Trifolium incarnatum*, a rich clover, brought from London recently, by Junius Smith, were distributed by the secretary among the members present.

Subject for next meeting: Grape Culture, Grafting and Orcharding,—Transplanting of Trees.

The Club then adjourned.

January 16, 1849.

Mr. SAMUEL ALLEN in the Chair; HENRY MEIGS Secretary.

Mr. Meigs read the following translation and extracts made by him. *Portu Lacca*, a Purslain, recently introduced among us,—a beautiful flower, when scattered in a grass plot, gives a carpet-like effect, and continues flowering all summer:

Extract from the London Magazine of Science.

AN ANCIENT DAHLIA.

In the travels of Lord Lindsey, it is stated, that during his wanderings in Egypt, he discovered a mummy, which the hieroglyphics

inscribed on it, proved to be at least two thousand years old; and in one of its closed hands, was found a tuberous or bulbous root. This root he planted in a sunny soil, and after a few weeks had elapsed, it grew, and eventually blossomed into a beautiful dahlia.

J. D. Wyckoff presented Malay potatoes, brought by him from the island of Java. They resemble the sweet potato, but are white fleshed, and are nearly devoid of the sweet taste.

On motion of the chairman, the potatoes were directed to be sent to Grant Thorburn, now at Charleston, South Carolina, for cultivation.

Extracts from the Gardener's Chronicle and Agricultural Gazette, London, December 9, 1848, sent to the Institute by Joseph Cowdin, U. S. Consul at Glasgow.

COTTON CULTURE IN AUSTRALIA.

"I found the cotton plant growing vigorously on the banks of the Brisbane river, in latitude $27\frac{1}{2}^{\circ}$ south, from seed from America,—the black or sea island. The cotton here is exceeding beautiful. The Australia cotton will be a very superior article, in the fertile soil, in the splendid climate of Australia. In addition to this, coffee, sugar, tobacco, indigo, arrow root, sweet potato, pine apple, banana, &c., flourish."

What is a show of fat cattle to teach?

Exhibitions of this kind hold the same relation to agriculture as exhibitions of other kinds hold in relation to other arts. The Smithfield show possesses greater professional or technical utility, than almost any other, unconnected with agriculture, that can be named.

Extract from a letter from Junius Smith, Esq., to Gen. Adoniram Chandler, dated,

Greenville, South Carolina, Dec. 29, 1848.

Dear Sir—In this morning's newspaper, the 'Mountaineer,' published in this town, I perceive an extract from the New-York Courier and Enquirer, under the head, 'What are the Planters of the United States to do?' over your name. I am obliged to you for your kind notice of my humble efforts to aid in giving an effectual answer to the enquiry, and for your commendation, to those in this part of the Union most deeply interested in the success of Tea cultivation.

On the 15th and 16th instant, I planted out the tea seed I brought with me, on a small lot of land, but sufficiently large for my purposes, presented for my use, free of rent, by Dr. Stone, with the offer of another lot if I should require it, upon the same liberal terms.

My tea plants were detained some days in Columbia for want of a conveyance, and I was finally obliged to send them by railroad to Hamburg, opposite Augusta, a greater distance from Charleston, thence by a return wagon, 130 miles, to this place. They came in with six mules in a remarkably short time, being only five days in running one hundred and thirty miles. They arrived here on Saturday evening the 23d inst. In the mean time I was diligently occupied in preparing the ground for the reception of the plants, which was no slight labor in this hilly, rocky, stumpy, rooty domain. On Tuesday the 26th, I planted out *the first tea shrubs ever cultivated in the United States for agricultural and commercial purposes.*

Christmas made inroads on the 26th, and I planted out one case only, of eighty plants in fine condition. Wednesday it rained all day. Yesterday was a fine and frosty morning—ice in the garden the thickness of a shilling. With the assistance of six colored men, I made great progress and planted three cases. I should have finished to-day if the weather had been kind, but it rained all night and still continues. It is cold and cheerless without. I was gratified to find, in the closing paragraph of your communication, that “bunches of the plant in blossom” will impart an enchanting fragrance to the saloons of Russia, brings the fact to my mind, that several of the plants opened out yesterday, were in full bloom, with their leaves fresh and green, as if growing in China; others with the blossom buds just showing its snowy breast, ready to develop all its beauty; you may therefore say that the tea plant is in blossom in South Carolina. I have found but five plants in the whole which I think of doubtful vitality: those I have transferred to the infirmary and subject them to the most vigilant nursing. I have spared no expense of time and am delighted with this part of the country *as a tea growing district*, and think the soil, climate, &c. most desirable. The soil is light and thin, hard to cultivate for general agricultural purposes.

Mr. Holmes presented a bottle of Scuppernong wine for trial. He has had it for twenty-three years. It was considered good light wine.

Mr. Meigs said it recalled the taste of some Persian wine, which he received some thirty years ago, from Persia, by the title of *wine of Hafiz*, supposed to be the wine celebrated by that favorite poet of Persia. That wine together with Scuppernong and many wines from Greece, and the Islands of the Mediterranean, were often tasted at the table of the learned and amiable Samuel L. Mitchill, and the Hafiz and the Scuppernong were considered to be much alike.

Chairman.—The regular subjects, grafting, orcharding, transplanting of trees, are now in order.

Dr. Underhill, of Croton Point—had found that grafts from trees which had been injured by the borer were objectionable, and as stocks to engraft upon also. Crab apple is an excellent thing to graft on. Let the crab be 6 or 8 years old, and about 3 or 4 inches in diameter, and 8 or 10 feet high, then graft on the limbs, the growth is fine and the stock is far less liable to the borer or to other difficulties, or diseases. Our hot sun in July is more injurious to other grafts than those upon crab stock. And I have gained fruit in half the time as from a natural apple tree. Graft on 4 or 5 limbs, several inches from the main stock.

Chairman.—It is said that by grafting a rich fruit upon another rich fruit, a still richer is obtained.

Dr. Underhill.—It is said to enrich the flavor of the fruit. Transplanting a second time, multiplies the roots.

Chairman.—I was told that in July or August, we should dig around the tree, cut off the main roots, tap and all, then cover up until the fall, then transplant and we find the small roots formed, make a thousand mouths to take in nutrition for the tree.

Mr. Meigs.—The French recommended that method, and further, that when the tree is transplanted, secure by forked sticks driven firmly into the earth, over the main roots, so as to prevent their being moved by the wind, so that the young and tender roots can have a steady undisturbed growth.

Judge Van Wyck.—The Romans used crab stocks for engrafting on.

Chairman.—Can the pear be grafted on crab?

Dr. Underhill.—Virgalieu pears are grafted on the Hawthorn and yield a beautiful crop.

Chairman.—Will not our Hawthorn do?

Dr. Underhill.—The pear on it so outgrows Hawthorn stock, that it is very liable to be broken off by the winds.

The advantages of grafting apple and pear on quince, are a quicker growth and finer fruit. It is a dwarf growth. I have several of the finest French pears on quince stocks, bear fruit in half the time. They are said not to last so long, they say 20 years in France. But it forms a very beautiful and ornamented shrub from two to five feet high.

Chairman.—The fruit touches the ground from the lower limbs.

Dr. Underhill.—Yes if not supported.

Judge Van Wyck.—Such trees, full of their fruit have been placed on the table; the fruit has been there gathered by the guests.

Dr. Underhill.—A variety of fruit can be had on the same stock, coming to maturity at their different periods. These trees present a beautiful appearance. I have transplanted trees in Spring and Fall with success but I rather prefer the Spring.

Judge Van Wyck.—Have you done much in raising trees from seed? I have had in three years from planting, very good peaches large and high flavored.

Dr. Underhill.—I judge of the qualities of fruit somewhat from the appearance of the young trees in the nursery. Those of smooth, fine stocks and broad rich colored leaves generally prove good fruit. That is the opinion in Europe. Take a graft which will bear fruit and you can have fruit the first year, but the graft is not so likely to live.

Gen. Chandler.—How do you select seeds for trees? It is said to be important, to select the fine, plump seeds only, and from the best and healthiest trees.

Dr. Underhill.—Plant seeds of fruit of healthy trees.

Chairman.—Why do the Virginia peaches do so well?

Chairman.—The Virginia peach pits are valued for planting. I had a large lot of peach tree roots which the owner had given up as ruined by mice, having gnawed off the bark close to the ground. I grafted those roots and the grafts grew 3 feet the first season. I have about 1,500 of them. I grafted two on each root, mean to let one stand.

Chairman proposes the care of stock in winter and spring, between hay and grass, as the farmer's saying is, for our next subject.

Adopted.

The report of the 20th Annual Exhibition of the Massachusetts Horticultural Society, at Faneuil Hall, in September, 1848, was received and laid on the table for the examination of the members.

Report also from the New-Haven Society.

The Club then adjourned.

February 6, 1849.

HON. JAS. TALLMADGE, Pres't Institute, in the Chair; H. MEIGS, Sec'y.

The President.—I venture to call attention for a moment to the happy and remarkable situation of our city, relative to its supply of every production of horticulture, by steam power, on railroads, river, &c.—all the little fruits, however delicate, are brought to us in great abundance in fine condition—distances from thirty to one hundred miles. Any information as to horticultural products is desirable. I present to the Club the statement of the results on twenty-nine and a half acres—the garden of the Bloomingdale Asylum on this island, for last summer. On this spot, by the labor of six men and one woman, the market value of its productions was \$4,343.11, and the profit \$2,141.56.

Whatever can be found to stimulate the works of the farm and the garden, is important.

A neighbor of mine has recently imported from England, glass milk pans. They say there that the wooden vessels are not good for it; that the glazing of the earthen ware is injured by the acid of the milk; that metallic pans give an unpleasant flavor to the milk. That the glass blowers of our country may be induced to make such pans, I place one here for their observation, imitation, or improvement.

The President.—I desire to call your attention to another matter. Some time since I saw in a Delaware newspaper, "A farmer in Delaware took one yard of British cotton, called Ohio extra sheeting, which weighed a quarter of a pound, the sizing or starch being extracted by washing, it lost in weight one hundred and eighty-four grains."

In this short extract are visible some points very essential for our country. The United States produced last year, about two and a half millions of bales of cotton; these bales are, on an average, of about four hundred pounds weight each. If this cotton was manufactured into cloth here, it appears that *it would require for its sizing*, two millions and a half barrels of flour, each barrel of flour requires five bushels of wheat; we might then have fifteen millions of yards of cotton cloth. It is believed that the Lowell factories consume annually more barrels of flour than were exported from this country before the recent famine in England; to which must be added the quantity called for in manufacture, the increased consumption of flour for the labor it employs..

Mr. Meigs read some translations—Annales De La Societe Centrale D'Horticulture De France. Sept. 1848.

Butter Bean of Riga.—We have given some notice of this vegetable in the preceding reports. We shall content ourselves at present with giving our assurance that it merits general recommendation, on account of the abundance of its product and its generally admitted good qualities. It may be gathered from July to October. The pods when green are very good. When at maturity the beans are of a deep violet color. They are good to eat all winter, soaking them in water before they are cooked, and then they are little inferior to fresh beans. The substance of them is better than other colored beans. They are quite green in the inside, when cooked. They ought to be in every garden. When considered in comparison with the translucent bean of E. Lefevre—which they much resemble—

with the *wax bean* of Prussia, the Algerian bean of Mon. de Vilmorin, the Festerling bean, and the transparent bean, we think that its tenderness well justifies its name of butter bean.

PRESERVATION OF POTATOES.

Put quick lime into a hole or ditch in the earth, slake it, when oval put in potatoes, so that they may all be covered with the lime, let them be for twelve hours, then take them out, wash them clean, let them dry, and they will keep for years, but will never germinate.

Mon. Masson brought from Antwerp the Dutch red cabbage heads, so close in their structure that they weighed twice as much for their size as the other cabbages.

Mon. Masson also brought from Vienna *violet turnip cabbages*, very tender, not stringy.

Also, Maltese cauliflower. Also the white early cabbage-turnip, of Germany, which gives conical turnips of some eighteen inches in circumference.

The Bassano beet has a red skin, white flesh, veined with rose color; deserves to be ranked among the earliest and best.

POPPIES.

The young leaves of poppies form an agreeable dish when boiled as greens, and served up with butter, as spinach. Most persons testify great surprise, when offered a dish of poppies. They are very suspicious, but experience cures all that; they make a very agreeable dish. It seems that the soporific power does not exist in the *young leaves* of the poppy.

The President called for the discussion of the regular subject, the care of stock in winter, between hay and grass.

Judge Van Wyck.—The gentleman who proposed this subject (Samuel Allen, Esq.) is absent. I will submit a few observations upon it. Protection from weather, comfort, food must be good and plenty of it. The hay should be well cured, and put away in pure condition. Almost every farmer uses bran and corn stalks; nothing is better for the milkers, if the stalks are preserved as they should be, that is, with their juices perfectly dried before they have time to lose their firm and saccharine quality. Gluten and phosphate exist in bran.

During gestation, cows should be kept with peculiar care, that their calves may become healthy and well grown, and they should have all the milk and all its cream, for about three weeks at least. No young animal should ever be stinted or pinched; their stables must be kept clean, and have free ventilation.

The disease called the Pleuro Pneumonia is existing here and in England, we had it to some extent in Westchester, last year. It is believed to be owing to want of pure water, and lack of clean living. The soiling system which confines cattle somewhat, renders the draining, cleaning, pure water, ventilation, &c. absolutely necessary, to prevent that dangerous and insidious disease. And when the spring comes the cattle should not suddenly be turned out of their winter establishment into green food. Wait a little till the grasses acquire more strength of growth.

Judge Van Wyck. The English say that this Pleuro Pneumonia is the ancient *Murrain*. This disease is more common in summer than winter. The cattle of Holland are not so much affected as elsewhere. Their management being extremely neat, clean and comfortable. They *scour their stables as well as their houses!* The English are in this respect clean too, but not like the Dutch.

Mr. St. John. Cattle are formed to be liable to pretty nearly the same diseases as man. Our main point is, secure the health of man by giving him none but *pure milk and meat*.

Horses are as liable as men to disease of the liver, so are cattle. It is want of proper care that produces the mischief, want of good housing, free air, good food and water. Horses left to run out doors all winter, formerly, and some now, become consumptive. The Northern horses by means of care are worth twenty per cent. more. We are bound to watch and understand the diseases of our cattle and horses. If they could only speak, they would proclaim their distresses!

Subjects for next meeting.

Judge Van Wyck, proposes the relative interests of the Atlantic and Western States as to Agricultural products.

Mr. Fleet. The relative size of farms to population.

Both subjects were adopted, and the club adjourned.

[Assembly, No. 244.] *A

February, 20 1849.

R. L. PELL, in the Chair. HENRY MEIGS, Secretary.

Mr. Meigs.—Read a translation from the French of an account of the *Thoka* of Birman. Mons. Poiteau of the Central Society of Horticulture states that in 1832 he saw a China colored drawing of a flower of extraordinary beauty, unknown to botanists generally. But it appears that Dr. Wallich director of the Botanic garden of Calcutta, knew of the existence of some of the plants in Birman at a ruined Kioum (a kind of monastery) two miles from the river Salem on the right bank, and 27 miles from Martaban in the province of Martaban. The largest of these plants was about forty feet high, six feet around at three feet above the ground. The young branches and leaves which are washed with purple are pendent—flower stems about three feet long, having on them fifty or sixty large flowers of a *red vermillion* color, red foot stalks, no perfume, presenting the most magnificent flowering shrub in the world. Dr. Wallich named it the *Amberstia* after Lady Amherst. The Duke of Devonshire has one of them. Dr. Wallich has not seen its fruit ripe. An imperfect one was a sabre shaped pod of a red-violet color, about a foot long containing five or six imperfect seeds.

From the Review Horticole. Paris Sep. 1848.

THE CEDAR OF LEBANON.

At Vriigny on the edge of the Forest of Orleans, *Duhamel* planted in 1745, a circle of trees in the centre of which he placed a cedar of Lebanon, which is remarkable for its form and size. At about 18 feet from the ground the branches commence, and continue diminishing in extent to the top, so that in form this cedar resembles a pineapple. At the height of six feet from the ground, the trunk is about fifteen feet in circumference. It is said that Mount Lebanon is now despoiled of all its cedars, so that probably this one at Vriigny is the only distinguished survivor of the race.

Chairman.—The regular subjects are in order, viz: The relative interests of the Atlantic and Western States as to agricultural productions, and the relative sizes of farms to population.

Judge Van Wyck.—This question involves matters more interesting to posterity than to us, still it is a very important one. The

great West, as we have called it, the valley of the Mississippi and the country as far as the Rocky Mountains, (beyond which is the last great West,) have peculiar advantages; they have become the great granary and cattle fold of the nation, soil rich, is easily worked, it may almost be said that bread is its spontaneous product. One man plants one hundred acres of Indian corn and fifty of wheat, and gathers them with little help, while in our Atlantic States, so long worked, they demand great manuring and labor; a farm of three hundred acres demands three or four men in constant labor.

The grasses of the West are abundant and highly nourishing to cattle, and there is no necessity for saving much hay. Far less care of them is wanted in winter. Now it is apparent that the Atlantic States are commencing a condition of things different from the West, and the sooner it is understood the better. We raise but a part of our food; we receive it from the west, and pay in manufactured articles of every description. But as to the cattle &c., from the west, we must keep them to rest and fatten before used. We demand gardens, we must have milk, butter, orchards, fruit and poultry. These to supply towns and cities which are growing rapidly on the sea board and will continue to grow. These productions will be rapidly conveyed to market in the best order.

I wish to say something as to bran. Our friend Mr. Pike is present and I must say that he speaks of bran in terms not justified by the practical or the scientific men who have carefully examined its properties as food for animals. Chemists of the highest rank, find it to possess gluten, nitrogen and abound in phosphates, that it is too rich in the latter, as is proved by its forming occasionally, hard substances in the stomachs of animals which have had too much of it.

Mr. Cozzens.—Hay ought always to be given with it.

Judge Van Wyck.—The usual quantity must be given along with the bran.

Mr. Cozzens.—All ruminating animals require hay. I saw the sagacity of an elephant to whom some cakes called round hearts were given, in his wrapping them in hay and thus eating them.

Mr. Pike.—There are two sorts of bran, one is called ship stuff.

Judge Van Wyck.—I mean the hulls of wheat or grain. Husks and chaff are good to make cattle thrive, bran especially for young

cattle, bran for cows in gestation; it is most important in the formation of bone. It is found to be good for sick cattle, and it tempts the appetite of animals.

Mr. Pike.—I stated that I gave brain as an embodiment of the medicine.

Messrs. Anthony & Emerson, churn butter from milk in three and a half minutes in their patent churn. They also attempted to churn butter from cream, but the cream being frozen, and then accidentally placed too long near the stove, became heated to 120° Fah, being then churned it gave a kind of drawn butter or oil, but after being quiet fifteen minutes and somewhat cooled, it was again churned two minutes and gave one pound and fifteen ounces of good butter from seven quarts of cream. It would seem that such a saving of time and labor in making butter, would lessen the price at least one per cent. per pound, while at four ounces a day of butter for each family in the United States, say 3 or 4 millions of families, exhibits a saving of 7 to 10,000 dollars a day.

The Chairman calls up the regular subjects.

Judge Van Wyck.—Europe being filled with people necessarily has small farms,—we too one day must diminish the sizes of our farms,—at present our children go to the West,—we have no small ideas yet. One hundred acre farms are little enough for us, now. In Europe many contrive to live on lots of one, two, or three acres. There are whole departments in which farms do not exceed fifteen acres. These farms find their markets at their doors they cannot afford to go far to market. Such small farmers by perfect manuring and work manage to get along.

Mr. Pike.—I think that there is no danger of a condensation of farms here. There are now near me two farms for one twelve years ago, the larger farmers being about division. On my farm of ninety-eight acres, I have three men. The condensation of farms in England, I look upon as a great evil,—it is deemed to be a great political evil. Small farmers cannot sustain stock, they have to borrow horses and cattle, or if they try to keep them, they half starve them, so that their horses are not able to do a day's work.

The Chairman.—The comparative surplus of the cereal grain in Russia and the United States in 1847 was, Russia 224,000,000; United States 224,384,502.

W. H. John.—We shall double, yes, treble, our surplus in the next forty years, prices will fall in proportion.

The same subjects to be continued and also proposed by Mr. Downing, the best mode of manuring.

Adjourned to 1st Tuesday of March next.

March 6, 1849.

JUDGE VAN WYCK, in the chair, HENRY MEIGS, Secretary.

Mr. Meigs called the attention of the Club to the new agricultural work of Fresenius, it is highly recommended by one of the most enlightened and judicious agricultural societies in the world, viz., the Highland and Agricultural Society of Scotland. They say of this "Hand Book of Chemistry applied to Agriculture," "Dr. Fresenius has been known for some time by his two standard works on Analytical chemistry, and we congratulate the agriculturists on the appearance of this new book." Authors generally are careless in their Indices. This book is all *Index*, if we may be allowed the expression; any one who has studied Euclid's Geometry will understand our meaning. No one thinks of an index to that book, because everything flows so naturally from what goes before, that any part required can be readily found. The whole style is so peculiar that we must refer to the original for a full confirmation of what we have said in its praise. Contrary to many writers, there is here nothing taken for granted, nor any theories built upon unsafe or uncertain deductions.

On the main subject of the day, the relative interests of the Atlantic and Western States in Agriculture. It was reasonable to suppose that all articles of a tender, delicate character, can not bear long transportation to markets, without injury, but that the masses of bread stuffs, and the horses and cattle would belong to the West, and when the cattle arrived here our part is to prepare them for market.

Mr. — spoke of meadow lands continually improving in fertility for many years by draining and top dressing, say 20 years.

Judge Van Wyck.—I have known meadows give two ton of hay per acre, they were never scarified or plowed. What grass falls down or is trod down form a-top dressing naturally.

Mr. Cook, observed that in comparing fruits of the east and West, those of Massachusetts stand high.

Mr. Cozzens gave some account of his winter experiments in the care of Poultry. By placing them in a warm, well lighted and ventilat d cellar, where they had access to fresh earth aad pounded chalk and plenty of food. Eight pullets gave Mr. Cozzens two hundred and seventy-seven eggs between the 15th of Dec. 1848, and the 3d of March 1849. I gave corn and oats to them and boiled parsnip chopped small.

F. Mortimer Butler, sent the following communication on the subject of manures.

To HENRY MEIGS, Esq. Secretary of the N. Y. Farmers' Club.

Dear Sir—Accompanying this you will receive a box containing dry-rotted chicken dung, the product of my coop, all the manure of the coop is taken up in this condition which is the best possible form for distribution, at least in the estimation of your humble servant. By examining it you will find that it is mealy, it keeps moist, gives the land a character of permeability, or in other words by tempering the land presents the *condition under which plants feed*, which is in Agriculture the main point that the farmer should keep in his "mind's eye." All material designed for manure, I rot by this process, and bring to the condition you see the rot in, which specimen is still progressing. I have procured this winter about fifteen barrels of such material as sent you, and feel that fowls can be made profitable manufacturers of manure, their services as yet remain unappreciated.

Respectfully submitted,

F. MORTIMER BUTLER.

S. Brooklyn, March 6th, 1849.

Mr. Meigs proposed as suitable to the coming season the subject of grafts and seeds. We have heretofore distributed many thousand, and so far the good is unquestionable. Fraudulent means were well known to have been used in reference to seeds, everything that we can do to encourage purity and integrity in this important branch of agriculture ought to be done.

Subjects adopted, GRAFTS and SEEDS.

The Club then adjourned.

April 26, 1849.

FARMER'S CLUB OF THE AMERICAN INSTITUTE.

R. L. PELL, of Pelham, in the chair. HENRY MEIGS, secretary.

The secretary read the following translations from the French, made by him :

Revue Horticole, Paris, Nov. 1848.

The question of grafting upon a graft is decided. Every one knows that when we have grafted fruit trees, which afterwards show that their fruit is inferior, we re-graft on them. Such re-grafts grow perfectly well, and we are not mistaken in saying that this operation gives a sensible improvement in the quality and size of the fruit. The labor of Van Mons and of Girandon, who for many years have experimented upon it, convinces us that by this means very satisfactory results are obtained.

Revue Horticole, June 1848.

The climate of the north of China presents very great similarities to that of the south of England, and the north of France. In the south of China, the lowest temperature is in January and February, 7° 20 centigrade ; Fahrenheit, 19° ; greatest heat in July and August, 31 cent., Fah., 80°. Annual amount of rain, upwards of 30 inches.

Head Cabbage of Angraville.—The Horticultural Society at Clermont publishes that this cabbage is an excellent variety, and differs essentially from all we are acquainted with. Its head is of about the size and shape of the heart of an ox ; the leaves resemble the winter cabbage. When sown in autumn with the York cabbage, it bears the winter well, and heads next spring. It has a better taste than the York, and is equal, if not superior, to the best cabbages of autumn. It has another advantage, which is, that it heads well in summer and in the fall, so that successive sowings of seed from the month of September until June, we have excellent heads, without interruption, from May to November ; but when headed, it does not bear winter's frost well.

Mr. Meigs presented seeds of the Lentil, and observed that this ancient leguna had been used in Paris and elsewhere as a valuable remedy for dyspepsia, and a wholesome food. It is grown the same manner as peas nearly.

Mr. Backhouse presented a pine, the fruit of an Italian pine, resembling a pine apple, and as large as a small one, having seeds, under its outside imbrications, which are eatable.

The chairman read an article, proposed by him on the subject of the manure of the cow, and on the comparative merits of soiling and pasturing. Judge Van Wyck did not entirely coincide in the preference given to soiling over pasturing, except where population is dense and land dear; and here there were exceptions; for in Holland, one of the most densely populated countries of Europe, they grazed their cattle, and were famous for their good butter and cheese. These generally bring from 10 to 20 per cent. more in European markets than any other, and this was ascribed in no little degree to their rich soil and nutritious pastures, and grazing their cows upon these in summer. The subject had been much discussed in this club heretofore, and as it has been unexpectedly introduced, and was not much connected with the regular subjects of the day, he would rather say but little on it now.

Mr. Meigs said that it is believed by agriculturists that the fertilizing elements produced in cities is of a value equal to the sustenance of its people.

The secretary read the following communication from Dr. Boyd:

In the presentation of specimens of Poudrette, prepared by the use "Le Doyer's Disinfecting Fluid," as intermixed with night soil and common garden mould, the power of removal of sulphuretted hydrogen, and the retention of ammoniacal gas, by fixation in combination with nitrogen as obtained, is the claim of the proprietors, by patent, of this agent, leaving to the experience already had to decide upon the comparative value of animal manure over all others, and for their manner of preparing the compost, they claim superiority.

That the claim is established, the specimens exhibited, so far as its capability to render night soil inodorous, must fully satisfy, it remains only to show, (without reference to the experience heretofore obtained in France and England,) the greatly increased power of compost prepared by this agent; that on chemical principles the result must and will be as claimed; and quoting Professor Leibig, from his Essay on Chemistry in its application to agriculture and physiology, we find that he says, in part 1, chap. 1:—"The ultimate constituents of plants are those which form organic matter in

general ; namely, carbon, hydrogen, nitrogen, and oxygen. These elements are always present in plants, and produce by their union the various proximate principles of which they consist." "Nitrogen is quite opposed in its chemical character to two bodies now described, (referring to carbon and hydrogen.) Its principal characteristic is an indifference to all other substances, and an apparent reluctance to enter into combination with them. When forced by peculiar circumstances to do so, it seems to remain in the combination by a "*vis inertiae*," and slight forces effect the disunion of these feeble compounds. Yet nitrogen is an invariable constituent of plants, and during their life is subject to the control of vital powers. But when the mysterious principle of life has ceased to exercise its influence, this element resumes its chemical character, and materially assists in promoting the decay of vegetable matter by escaping from the compound, of which it formed a constituent." Nitrogen is an element of vegetable albumen and gluten ; it is a constituent of the acid, and what are termed "the indifferent substances" of plants as well as of those peculiar vegetable compounds which possess all the properties of metallic oxides, and are known as "organic base." Estimated by its proportional weight, nitrogen forms only a very small part of plants, but it is never entirely absent from any part of them ; even when it does not absolutely enter in the composition of a particular part or organ, it is always to be found in the fluid which pervades it." It follows, from the facts thus described, that the development of a plant requires the presence, first, of substances containing carbon and nitrogen, and capable of yielding these elements to the growing organism ; secondly, of water, and its elements, and lastly, of a soil to furnish the inorganic matters, which are likewise essential to vegetable life.

Now, in the *residuum* of animal manures, after the escape of hydrogen and oxygen, we must have alone carbon and hydrogen, as the remaining original constituents of vegetable vitality ; we, therefore, furthermore, only require the fixation or retention of the volatile alkali, ammonia, (formed by the union of hydrogen and nitrogen,) the value of which, to vegetable life is essential. In the case of Doyer's agent for the deodorization of animal *effeta* or *ordine*, the nitrate of ammonia is produced, and the alkali rendered less volatile by its additional equivalent of nitrogen, remains longer the source of fertilization, the carbonic acid being, from its own density, one-half heavier than atmospheric air, preserved in its original power, as contained in the excretion of animal life, otherwise than that lost through respiration.

The superiority of compost thus prepared by the fixation of nitrogen in animal manure in preference to methods used in its preparation by others, namely, the admixture of charcoal, lime, &c., adding thereby to the natural constituents, in parts, (while at the same time they change the effects of nature,) is fully proved by the consideration of the antecedent remarks. The question of economy for the practical agriculturist is, therefore, alone to be considered. The strength of human manure is computed to be that of 1 to 6 of ordinary manure; the time and labor of mixing this fluid with night soil would not exceed half an hour in preparing, ready for use, one ton; the cost of the fluid would be about \$2 a ton, easily transported.

Mr. Alanson Nash said that he viewed the communication made by Dr. Boyd to be a highly important one, as if the facts stated in it were true, and he had no reason to doubt their truth, our emigrant ships would by the use of this Disinfecting Fluid be rendered healthy and thousands of valuable lives would be yearly saved, which are now lost by ship fevers and other diseases generated on voyages at sea.

He also regarded the communication of Mr. Pell as valuable, especially that part of it which related to memoirs of the Sewers.

He had read recently a London paper which contained a communication upon the waste of street manure in the city of London by the sewers which emptied into the Thames.

This writer declared that the sewers of London constantly carried into the river "legs of mutton and loaves of bread," and regretted that this wastage of manure could not be prevented.

Mr. N. further remarked that the sewers of New-York carried off daily a great amount of manure into the rivers which partially surround the city, but which might be saved at little expense.

Cisterns should be put down at the mouths of the sewers or where they discharge themselves into the rivers, these would collect all the sediment from the sewers, which would be a fertilizing manure for gardens and farms.

Mr. N. remarked that he did not fully agree with all the propositions of Mr. Pell on the subject of stabling milch cows, though he had no doubt that a great amount of manure was lost by pasturage.

He said that in feeding cattle in the cold winter months, all their manure was saved in the stables or yard by confining the cattle, and they, notwithstanding, remained healthy, so with hogs in the fall and winter months, it was a practice to confine the animals in small pens, they fattened well and were healthy.

But milch cows were more healthy during the warm weather when they had an opportunity to roam at large at least during the day time.

That for the production of good and wholesome milk, fresh grass, pure air and water, and free exercise, were indispensable requisites.

These when obtained reserved the health of the animal without which no good or wholesome milk could be produced.

That confinement in the country where there was a full supply of pure water and air, and fresh grass feed, might not produce so bad consequences as when animals were shut up in stables in and around our large cities.

That animals confined in the summer season were constantly liable to disease.

Such was the case with a large number of milch cows confined at the feeding establishments in this city and its neighborhood.

The animals literally dropped down and died from disease, while their inhuman owners were drawing milk from these diseased animals and selling it to be used in our families.

Remarks of R. L. Pell, Esq., at the Farmer's Club, held in New-York, April 26, 1849, on cow manure compared with the food eaten, as a fertilizer of soils.

I have frequently expressed an opinion against the utility of keeping a large herd of young cattle, and cows, for the express purpose of enriching and manuring a farm; this plan is practiced to a great extent in Europe, and likewise in this country. I know a gentleman in the vicinity of New-York who keeps over one hundred and forty cows for this purpose; and I might name twenty persons, many of them known to you, who do the same thing, and who in my humble opinion do wrong. You are perfectly aware that hay contains all

the necessary ingredients, not only to support animal life, but to induce growth, bone, muscle, &c., and that hay without other food will perfect an animal. Such being the case, you must allow that a cow for example, so fed, forms her whole animal economy, such as muscle, sinew, hair, horn, &c., from the hay. She has four stomachs, and by the time the food eaten is masticated and digested, it is devoid of nearly all the ingredients it contained before the process; upon examination you will find it a mass of cold, inert matter, of really no intrinsic value; one fifth of its weight is insoluble, and nearly all the residue is water. If you compare it with the excrement of the horse, you will allow at once that the latter is far more valuable for agricultural purposes than the former. Why? For the reason that the horse has formed his animal economy chiefly from the hay eaten, and the farinaceous food, has been principally voided; this farinaceous food contains all the requisites of growth, from potash to chlorine; and as it putrefies, it throws off carbonic acid gas, ammonia, &c., and if used in a hot bed, will force any seed from them very rapidly. Such an effect cannot be produced by the use of cow manure, you can raise no heat from it. If the urine of the cow were saved, which rarely occurs in this country, more advantage might be derived, as many saline matters find their way to the urine, and not the excrement. Most of our agriculturists allow this matter to escape to the nearest brook, or stream, or if not, they take no steps to retain its valuable qualities, by means of charcoal, dust, &c., but hasten its escape into the atmosphere. As this idea is so contrary to the opinion you must have formed, keeping as you do a herd of cattle expressly to eat up, and convert your corn stalks, hay and straw, into this useless compound—it will be necessary that I should point out to you a sure experiment, whereby you can readily become satisfied, that what I now state is correct. Mark out two pieces of ground, say two rods square, in a field similar in quality; manure the one with pure cow manure unmixed by the usual chaff, hay, straw, urine, &c., contained on a barn yard, which is in itself a most valuable manure, and which as it is usually mixed with the cow excrement, forms its enriching quality, and thus deceives the farmer, who attributes the growth of his cruciferous, leguminous and cereal crops to the cow manure, when it should be attributed to the chaff adhering to it.

Decompose similar hay, straw, corn stalks, &c., on which the animal has been fed, prevent the escape of ammonia from it, with charcoal dust, and enrich the adjoining two rods with it. Even after, you will rather decompose the refuse matters, and use them as ma-

nure, than keep an expensive and troublesome stock of meat cattle, chiefly for the sake of their excrementitious matters. I do not speak of animals kept for labor, working oxen, or those that are being fattened, as they are fed on farinaceous food, such as ground corn, oats, &c., all of which enrich the manure vastly, and much passes through the system; besides, these animals remunerate. I speak chiefly of cows, young heifers and steers. Many farmers keep this class of animals expressly to enrich their farms; which are daily becoming impoverished by this means. There is another enormous outlay connected with this mode of farming, which might be dispensed with, if cattle were not kept, and that is, inside fencing. Hundreds, millions, are annually expended by farmers, on inside fences, which are entirely unnecessary, except to keep cattle within certain bounds, and if cattle are not kept, an outside fence only is requisite.

The necessary animals on a farm, such as horses, oxen, and milch cows, should never run at large. For fourteen years my horses have been stabled, winter or summer, and my usual practice is to soil my cows. If I should state the advantages, they would surprise you so much, that I prefer rather to advise you to try the experiment and satisfy yourself. You will soon discover that five acres of well cultivated land will keep ten cows, in fine condition, much longer than twenty acres depastured; that by judicious feeding, and proper application of straw, leaves, and road-scrapings to the barn yard, you will make enough manure to pay the expense of purchasing ten new cows every year, turning off the old set to the butcher as beef. You may laugh at the idea of converting cows, that have given you from eight to twenty quarts of milk daily, each, throughout the year; nevertheless it can be done, for I have accomplished it. The reason is very evident; a cow depastured is walking twenty hours out of twenty-four, generally speaking, to fill herself, and satisfy her epicurean appetite, and most of the food is required to sustain the wear and tear of nature, consequently, little is left to form fat and secrete milk; whereas, in the barn yard her food is brought to her three times each day, and the order of things is reversed—she eats four hours, sleeps and ruminates twenty hours, takes on fat, forms bones and muscles, secretes milk, &c. By skill, a combination of food can be formed to produce almost any object—fat, milk, bone, flesh, &c.

To form fat, no better food can be used than bran, as it contains in every one hundred pounds from two to seven pounds of fat; wheat bran, made from the outer covering of wheat, contains two pounds in the hundred pounds, and corn from the outer covering

more than seven pounds of pure fat to the hundred pounds ; therefore, this is much better food for fattening animals than fine Indian meal or flour. Bran also contains the foundation of bones, phosphate of lime. Some farmers attempt to fatten stock upon roots alone ; this is impossible, for the reason that roots contain near 80 per cent of pure water. The usual produce of an acre is about thirty tons of either beet, mangel wurtzel, or turnips ; from this thirty tons, only 673 pounds of nourishment can be obtained. It will readily be perceived that animals fed entirely upon roots would produce but very little valuable manure to the feeder. If fed upon potatoes alone, the animal would derive only 359 pounds of nutriment from eight tons ; if upon wheat alone—say an acre will produce twenty-five bushels, or 1,000 pounds—the nourishment derived would only be 180 pounds. An acre of oats, if it yield thirty bushels, (about 1200 pounds,) would only afford the animal 133 pounds of nutriment. Straw alone will not fatten animals, for the reason that an immense quantity would have to be eaten to produce a perceptible effect, on account of its bulky nature. If straw is cut up and mixed with bran, it makes a capital and highly nutritious food. Boussingault says, in respect to the comparative merits of dry and fresh fodder, that the fodder obtained from hay is equally nourishing with that from fresh grass. A heifer was weighed and fed for ten days on green fodder ; each day a quantity, equal in weight to that consumed, being put aside to dry. The animal was then weighed and fed for ten days on the dry fodder, and weighed again. The experiment was repeated three times, and each time the animal weighed a little more after feeding on the dry fodder than after the green. The difference was not enough to prove that the dry food was the more nutritious, but that it was fully equal to it.

Great advantage accrues to the farmer who will take the trouble to boil or steam food for his stock, not only in the more rapid growth of the animals fed on steamed food, but in the increase of the food boiled. To prove the fact, place 5 pecks of rye in a boiler and it will be increased to 16 ; 5 pecks of wheat will be increased to 11 pecks ; 5 pecks of corn to 14 pecks ; 5 pecks of bran to 15 pecks ; 5 pecks of barley to 11 pecks ; 5 pecks of oats to 8 pecks. Next to food, warmth in fall and winter, is highly beneficial to stock ; one-third more food is required to keep an animal exposed to the elements in condition, than would be necessary if he were kept warm. I have proved this fact by experiment, and therefore speak positively. Salt should not on any consideration be overlooked by the herdsman, for although it cannot be considered ne-

cessary on account of nutritious qualities, which I do not think it possesses, but as a sharpener of the desire for food, and an exciter of thirst, which in milch animals is particularly desirable, as water supplies to them oxygen and hydrogen, besides several mineral substances, necessary to replace the daily waste caused by the continual consumption carried on by the operations of life in the formation of their fluid and solid elements, and by the constant process of respiration and exhalation. Bear in mind that if laboring oxen, calf-bearing cows, or young cattle, do not receive the supply of proper food their economy demands, they immediately become reduced; your ox is incapable of labor, your cow produces a lean, half-famished calf, to which she is unable to give milk, and your young cattle remain young cattle, as far as size is concerned. Every animal has a natural capacity for improvement, proportioned to his power of digestion, and must be fed accordingly, if he is kept below this power by insufficient food, he makes little or no improvement, but merely sustains life, and if he is kept above it by luxurious fodder, repletion is the consequence, and further improvement stops. As manure is the chief requisite, indispensably necessary on all farms, that have been any length of time under cultivation, I would recommend farmers to devote much more time and attention to it than they now do, and let it consist of vegetable, animal and mineral. Let them add to their barn-yards marl, muck, leaves, corn stalks, straw, refuse of all kinds, weeds, sand, coal ashes, soot, wood ashes, excrementitious matters from dwelling houses, hen and pigeon manure, rotten wood, soap suds, saw dust, bones burnt, refuse from refineries, coarse hay, and almost any other matter that can be found. Sow the whole over once a week with corn, and turn in your hogs, after they have thoroughly turned it over and incorporated it, cover the whole with a coat of charcoal dust, which will take up and retain the valuable volatile substances, until rain comes in contact with them, when they will be carried down into the heap and increase its value, the manure from the swine will add to the mass highly nitrogenized substances, very valuable in the growth of vegetables, grain, &c. Abroad the manure of hogs is not considered valuable, and the reason is they live mainly in the fields upon grass, and are rarely fed cereal grain; whereas our American porkers are fed upon the slops of the kitchen, consisting of bread, meat, vegetables, milk, &c., together with corn, etc. The manure from animals so fed is exceedingly valuable, and a great acquisition to farm yard manure. The dung of sheep is much and justly esteemed, and should always form a part of the barn-yard composition; one hundred loads of sheep manure, is of more value than one hundred and

forty loads of barn yard manure, even if it be combined with horse manure.

I would, however, prefer the excrementitious matters derived from man to all other manures, and trust the day is not far distant when our city authorities will find it to their interest to construct at the terminus of every sewer, a light receptacle for the collection of excrements, street water, &c. The street manure should then be removed to some convenient place, where the two matters might be incorporated. If this plan were pursued, in five years this matter would become an immense revenue to the city, and every man, woman and child would afford a *quid pro quo* for their annual support. Next to human ordure, I prefer a compost for all agricultural purposes, made of the following substances, and in the manner following: Collect refuse hay, river or sea weed, river mud, rushes, corn-stalks, blood, hair, horn, shavings, bone dust, leather, shavings, dry leaves, bushes, tender twigs of trees, decayed wood, branches, buckwheat haulm, chaff, muck, straw, place them together in a compact heap, cover the mass with quick lime, over the quick lime place a layer of peat earth, sods, &c., and over that plaster of paris; then a layer of clay or sand, over that soot, leached and coal ashes, unleached ashes, a few bushels of salt, then saturate the whole with water, and when decomposition commences, cover the whole with pulverized charcoal dust; occasionally it will be necessary to run a crow-bar, or long rod of iron through the heap in various places to admit the moisture. In two weeks this will be a fine mass of the most valuable manure imaginable, containing every known ingredient found in any plant by analysis, and capable of producing wonderful effects; add to this deep sub-soil plowing, and your farm will surpass your most sanguine anticipations.

Tull said manure was entirely unnecessary, if the ground was properly plowed and pulverized. Many have tried this plan, and for a time it proved successful, that is to say as long as it felt the effect of the decay of vegetation upon it, or the manure previously applied. Manure cannot be made available to the plant until it becomes liquid, as it is only in that form that plants can elaborate it in their systems. In Flanders this is most perfectly understood, they place extraordinary confidence in the value of liquid manure, and always apply it to the plant when particularly required, sometimes when the seed is placed in the ground, but oftener when it is coming up; they seem to consider that perfectly clean tillage constitutes the chief principles of agriculture. They approve highly of

human ordure, which they remove from the sinks of their cities, by atmospheric contrivances, a leather hose connected with a cart in the street, is led to the sink, when the air is exhausted in the hose, as soon as this is completely accomplished, the excrementitious matters immediately flow to the cart. If our common council could be induced to make the arrangement before proposed respecting the sewers in the upper part of the city, and cleanse the lower part after the Flanders plan, millions would be added annually to the agricultural interest. It is admitted by those who have given the important matter attention, that the ordure of every person is sufficient if properly used, to raise bread enough to furnish the person a whole year. The loss, then, that is suffered in a community like ours, is immense indeed.

Mr. Alanson Nash expressed an opinion that the remarks which had just fallen from Mr. Pell were of too much importance to be confined to the small number within hearing of the speaker, he hoped they would be extensively published. A London writer very justly remarks, that the common sewers of London were constantly casting into the river *loaves of bread and legs of mutton*.

The chairman observed that his system of soiling cows had been rewarded with a medal. The increase in the milk is very great, and the animal is fatter by the end of the year. As to the soiling plan I make five hundred loads of manure by that method, instead of perhaps ten loads gathered from pastures; and it is convenient in the soiling yard to add charcoal dust to fix the ammonia.

Dr. Underhill had soiled his stock for many years; soiling best in places where land is dear and population dense. Well fed stock, especially fed on grain, gave the most valuable manure.

Mr. Van Wyck had been shown peach trees at the South, said to be nearly 100 years old, still bearing, and tolerably thrifty looking, and on a lean gravelly soil, no nursing or attention paid to them in any shape.

Subject for the next meeting—SEEDS—the best way to *raise*, to *test*, and to *plant* them.

The Club adjourned to Tuesday, May 1, at noon.

H. MEIGS, *Secretary*.

